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This copy is not for sale. It is intended for more than one reader.  
PLEASE READ IT AND PASS IT ALONG

# Soviet Views on Limited War\*

Doctor Raymond L. Garthoff

AS THE increasing Soviet nuclear power has made all-out thermonuclear war less and less attractive as even a reluctant resort, military thinkers in the West have been confronted with the problem of military (and political) substitutes for total war. Viewed in this perspective, it is not difficult to understand the standing Soviet preference for such substitutes in the face of American thermonuclear striking power. The mutual ability to destroy the opponent, regardless of who should strike first, apparently is in sight.

While such a situation may lead to mutual deterrence from all war, it is only prudent to assume that it may only deter from total war, but not necessarily from other forms of armed conflict. Maintenance of a continuing thermonuclear capability for total war is, of course, essential to the deterrence of total war and would always be available to implement a strategy of last resort.

The Soviets do not explicitly discuss possibilities of limitation in doctrinal terms. Their occasional discussions of Western views on possible limitation usually are couched in propagandistic terms. Nonetheless, it is possible and indeed most necessary to consider the probable calculations on limited war in Soviet policymaking.

Before discussing Soviet views of pos-

sible limitations (geographical or in the use of weapons) on war, it is perhaps useful to note that in addition to such military substitutes for total war, there is an entire range of political substitutes for armed conflict. At the present, the Soviets favor the use of nonmilitary substitutes such as political and economic pressures, inducements and blandishments, military demonstrations and threats, subversion, colonial rebellion, and guerrilla warfare over direct military means as a strategy to extend Soviet influence and control.

Nikita S. Khrushchev, in his first major theoretical pronouncement (in February 1956), stated that Marxism-Leninism in the contemporary era no longer considers that war is inevitable; socialism may be established throughout the entire world without war. Thus characteristically, the ideology is reinterpreted in terms of the practical situation: war is no longer a useful course of national policy, therefore it is no longer "inevitable." And, if military force is to be used, the Soviets well understand (in the words of one colonel) the value of "the use of various means and forms of armed conflict depending upon the circumstances."

Soviet strategy is predicated upon the basic principle that war, as an instrument of policy, may assume various forms. It is not assumed either that nuclear weapons definitely will or definitely will not be used; rather, it is recognized that

\*This article is a chapter in the forthcoming book by the author titled *Soviet Strategy in the Nuclear Age*, to be published in early 1958 by Frederick A. Praeger, Inc., New York.

*Although the Soviets' nuclear arsenal is extremely powerful, it appears unlikely that they will initiate such warfare in a limited type conflict due to the overriding disadvantages that would accrue to the USSR*

under various circumstances they may or may not be employed. Consequently, the Soviets seek to build and maintain military forces necessary for conventional or nonnuclear warfare, and to prepare the forces necessary for nuclear war. Soviet recognition of the need to be prepared for general thermonuclear war is evident in many ways. Nonetheless, the available evidence suggests that the Soviets may believe it will be to their advantage to strive for the nonemployment of nuclear weapons in a future war.

Soviet propaganda, ever since the war, has ostensibly sought the complete prohibition of nuclear weapons. There are obvious propaganda dividends from playing upon the fears of peoples everywhere. There also is an obvious Soviet advantage in attempting to neutralize the nuclear deterrent strength of the United States. Less obvious, but more important, is the possibility that under certain conditions this objective might be achieved. The possibility of an effective international agreement to prohibit nuclear weapons must be recognized as very remote. But under circumstances of nuclear stalemate through mutual deterrence, the United States might forego use of nuclear retaliation if the Soviet provocation were clearly to involve less than a directly mortal threat.

#### Soviet Propaganda

In the Soviet political-military strategy, the wide belief in Europe and Asia of the existence of a general thermonuclear stalemate between the Soviet Union and the United States is regarded as an important advantage. Will other nations have confidence in the ability and resolve

of the United States to invoke what is viewed as a virtually suicidal *thermonuclear strategy* to save Iran—or even West Germany? Or would such countries welcome even a “limited war” tactical nuclear strategy which is, in any event, virtually suicidal for them?

The Soviet Union recognizes the value of exploiting this situation. The first objective presumably is the isolation of these countries from the United States. By offering blandishments and probably avoiding the appearance of threat of war, the Soviets will seek to secure the abrogation of US treaties of alliance and grants of base rights to the United States. At a later stage, the blandishments might give way to more open pressures and threats and a further extension of Soviet influence and control. If the circumstances were deemed appropriate for resort to arms, in this context, it is quite possible that the Soviet Union in fact may favor nonuse of nuclear weapons in a major war even in a situation of nuclear striking parity in which the USSR holds the initiative.

#### Soviet Avoidance of Nuclears

Three important considerations might lead the Soviet to avoid initiating the use of nuclear weapons. First, the Soviet bloc is stronger in nonnuclear military forces—increasingly so as the West comes to depend more and more upon nuclear military power. The *relative advantage* of the Soviet Union in seeking to avoid the employment of fission-fusion weapons, even at the risk of possible loss of initiative in the use of these weapons, is very great.

Second, the *absolute advantage* to both the Soviet Union and the free world is a powerful force for mutual deterrence from their use in war. Soviet forfeiture of the opportunity for prior use of these weapons might lead to Western decision on withholding their use. As the Soviet capability for delivering massive megaton attacks increases, the possibility of West-

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ern initiation of a mutual destruction duel seriously diminishes. And of this the Soviets are doubtless aware. This is true even if the West has failed to provide an alternative sufficient conventional or "tactical nuclear" theater capability, and is thus left no alternative but limited defeats (the American Continents, at the very least, being unassailable by Soviet conventional weapons). Particularly is such deterrence likely since the Soviet Union, by initial nonuse, would have shown an alternative—albeit unpleasant—to the vastly more unpalatable *certainty* of mutual destruction by reciprocal thermonuclear assaults.

Third, Soviet military thinkers do not regard nuclear and thermonuclear weapons as all-decisive; therefore, the risk of defaulting to American initiative in the use of the weapons *can be contemplated*, although to be sure not lightly. The gains of nonuse may be so great, and the possibility of successful mutual deterrence from their use so large, as to make this strategy attractive.

It is, of course, a precondition of a strategy based upon nonuse of nuclear weapons that the Soviet Union have a sufficiently powerful, and sufficiently invulnerable, intercontinental thermonuclear striking force to persuade and enforce mutual deterrence. Cognizant of this fact, the Soviet Union has been endeavoring, strenuously and successfully, to create such deterrent power. An air force suitable to this purpose is presently being acquired and perfected, and there are indications of Soviet development of submarine launched missiles and of an intercontinental ballistic missile especially useful for such a mission of deterrence. Similarly, Soviet civil defense efforts may serve this purpose.

### Soviet Strategic Concept

It is occasionally argued that the Soviet Union would not create an expensive and large long-range bomber force if she

did not definitely intend to use it. The speciousness of this argument is evident by comparison to our own objective: we are building a powerful Strategic Air Command as a deterrent which we hope never to have to use. And most important, *the Soviet strategic concept does not require the employment of an intercontinental striking force to gain a victory, while in the American concept and under current policy such use is assumed to be necessary.* In other words, the Soviets retain the flexibility of a strategy without use of the intercontinental thermonuclear striking force, and maintain the strong ground and tactical aviation forces to fight such wars.

In addition to the reasons noted, there are other doctrinal tenets which make views on possible nonuse of nuclear weapons seem feasible to the Soviets. Particularly in view of the belief that such weapons are not decisive, even in an attempted surprise blitzkrieg campaign, there would be no gain in initiating a war with mortal risk and the certainty of enormous destruction. The Soviet objective is expansion of power and influence, but only by ways in which the Soviet Union herself is not risked as the stake in an "adventure." Finally, if nuclear weapons create a recognized stalemate, this stalemate would serve as a shield behind which the vastly superior Soviet conventional military power could, through threat and possibly in actual limited wars, be used to expand Soviet control at much reduced risk.

If the reasoning advanced here correctly describes the Soviet position, favoring the nonuse of nuclear military power through mutual deterrence both for defense and as a screen for possible future expansion, the Soviet Union may avoid initiation of the use of nuclear weapons. In a situation based upon necessary enemy "cooperation," enforced by the enemy's own advantage, there is, of course, always the risk of an irrational enemy use

of his nuclear strength. Can the Soviet Union, or any country, take this risk? In view of the Soviet evaluation of the impossibility of attaining a decisive surprise nuclear blitzkrieg attack, it is reasonable to assume that this risk, while great, may be considered acceptable under some conditions. Moreover, *there is no alternative for expansion with less risk.* (Relative quiescence, which is not excluded in the reasoning, is, of course, less risky than limited moves of overt expansion.)

### Nonnuclear War

The Soviets themselves consider their preparations for nuclear war in terms reflecting implicitly the *contingent* alternative of nuclear war. For example, as Major General N. Pukhovskiy put it in 1955, since the enemy "threatens to use atomic weapons" the Soviet must prepare "to win in contemporary combat *also* [sic] *under conditions of the employment of atomic weapons.*" It is significant that Soviet descriptions of various tactical and protective measures in atomic warfare are typically stated in the terms "under conditions of the employment of nuclear weapons." Clearly such specification indicates a belief that warfare *may* also be conducted under other conditions, under conditions of the nonemployment of nuclear weapons. The Soviets also sometimes state that the existence of nuclear weapons "in the hands of the imperialist states and the *possibility* of their use in future war seriously influences the character of contemporary combat. . . ."

The Soviet view that future wars, general and local, *may or may not* include the use of nuclear weapons was most authoritatively set forth by Marshal Georgi K. Zhukov, in early 1957, when in reply to questions on whether atomic and thermonuclear weapons would be used in future wars he stated:

*Neither I nor anyone else can answer completely all these questions now because all wars, major and small, arise, are*

*waged, and end under specific political, geographical, and economic conditions.*

These various statements clearly imply the *contingent possibility* of nuclear war in Soviet thinking, in contrast to the presently dominant view in the United States (and projected into NATO) to assume that any major war *must* be nuclear, and accordingly to prepare only for that eventuality. For example, the testimony in 1956 of General Nathan Twining, then Chief of Staff of the United States Air Force, was to the effect that the United States cannot afford to prepare both for atomic and conventional war.

### Nuclear Deterrence

Soviet interest in preparing for the contingency of all-out nuclear war is, of course, apparent and anticipated on grounds of simple logic. The fact that it is advertised by such statements as those cited earlier, and others relating to nuclear weapons tests (in particular the thermonuclear tests of November 1955) is evidence of the Soviet attempt to maximize deterrence. Such deterrence purposes (and still less statements of alleged Soviet intent) by no means exclude the possibility that the Soviet Union may, under certain conditions, herself unleash a world thermonuclear war. But, as we have seen, there are cogent reasons for believing that the Soviet Union believes her greatest advantage would be served by avoiding a thermonuclear war and using her growing nuclear striking power to stalemate American deterrent power, and then to take advantage of this neutralization for purposes of gradual and probably indirect aggrandizement.

The Soviets are aware that the choice of limited or unlimited war may not be theirs. Several senior Soviet military men have, in 1955 and 1956, cited a statement once made by Lenin:

*Anyone would agree that an army which did not prepare to employ every kind of*

*weapon and means of combat which the enemy has or might have would be foolish and even criminal.*

And, as we have seen, the Soviets are building up powerful long-range air, naval, and missile forces capable of unlimited offensive thermonuclear war. But to be prepared to employ any weapon or to wage any kind of war does not mean it will be necessary to employ all kinds of weapons or wage all kinds of wars.

Several Soviet statements have hinted that general nuclear war will result only if the West initiates the use of nuclear weapons. Thus in 1955 Major General Pukhovskiy wrote that: "If the enemy decided on such an adventure as the employment of atomic weapons, he will be destroyed by the same weapon." It is quite significant that the specific threat to destroy the enemy with nuclear weapons is tied to American decision on the prior use of atomic weapons, rather than to American initiation of a war.

The implication that the Soviet Union would not initiate the use of nuclear weapons is quite in accord with the reasons earlier advanced which make such a course both advantageous and plausible in terms of the Soviet strategic concept. Similarly, Marshal Zhukov in his speech to the 20th Party Congress in February 1956, said that: "Future war, if they unleash it, will be characterized by atomic, thermonuclear, chemical, and bacteriological weapons," a formulation carefully preserved in the frequent subsequent paraphrasings of this statement, and reflecting the Soviet belief in American intentions to use nuclear weapons. It is likely that since 1955 the Soviet leaders have considered, in view of American and NATO planning and nuclear armament, that the West is increasingly bound to a nuclear strategy—if a general war is actually fought.

The other restriction on Soviet freedom of action in military development and

strategic planning, then, is the possibility of enemy assumption of the initiative. This was the key impetus to a Soviet reevaluation in 1954 and 1955 of the importance of surprise in the nuclear era, and the necessity to launch a preemptive initial nuclear attack if ever the United States would attempt to launch a surprise nuclear attack on the Soviet Union.

### Possibility of Nonnuclear War

These qualifications indicate that even if the Soviet Union decided that total nuclear war should be avoided in favor of a major nonnuclear war, they might not be able to ensure limitation of the war to a nonnuclear status. But the possibility of a major nonnuclear war in Europe remains strong enough—and may increase in likelihood—so that the question of preparation for waging such a war should concern all great powers. The Soviets realize this and plan accordingly.

A general war, limited by the nonusage of nuclear and thermonuclear (and probably bacteriological and chemical) weapons, might have no geographical limitations. What would be the characteristics of such a war? As Soviet nuclear striking power (weapons and delivery systems) has grown toward a balance with our own, this question has increasingly occupied Western political and military analysts.

A nonnuclear general war, in the fashion of World War II, seems indeed quite unlikely. In the past year and a half, the Soviets have shown signs of recognizing the decline of this possibility in view of American and NATO policy.

There is one case, however, of a major, although not world, war under which the Soviets may attempt to place the West in a position where we will not use nuclear weapons. This would result from a major Soviet challenge which they deem insufficient to provoke us to all-out massive retaliation under prevailing circumstances of mutual strategic deterrence. Thus at some time the Soviets might

launch a nonnuclear attack on West Germany, or on Western Europe, in general, if they had been led to judge mutual deterrence to be so strong a restraint on American action that we would withhold our nuclear fire in response to such a major *conventional* attack in which neither major protagonist was directly threatened. This might at the least present us—and the people of the area involved—with a most difficult choice, and conceivably might lead us, in line with Soviet expectations, to forego our relative advantage in the use of nuclear weapons and to fight a major nonnuclear war.

In examining Soviet doctrine for a nonnuclear war the task is simplified by the relatively recent transition from a nonnuclear to a nuclear strategy and doctrine. The Soviet military doctrine of World War II, with postwar modifications, provides a general basis for the conduct of nonnuclear warfare. The ground forces have been mechanized and their firepower greatly increased, but their operations would be conducted on the basis of a modified form of traditional doctrine. The tactical air and naval forces similarly have improved weapons, and basically unchanged doctrine. In the case of all these arms, Soviet doctrine has provided precepts for training for tactical atomic warfare; but such provisions are explicitly conditional upon the circumstance of the use of such weapons. In the nonusage of such weapons, doctrine also is clear.

#### Conduct of Nonnuclear War

The major distinction of Soviet military strategy in a nonnuclear general war concerns intercontinental warfare. The world geostrategic arena of 1957 (and of the future) creates serious problems for the Soviet Union. In the event of the nonuse of nuclear weapons, it is clear that the Soviet Union could not even seriously attempt to conquer the Americas and sub-Saharan Africa. The seizure of Western Europe, the Mediterranean, and parts of

Asia would surely be attempted. But let us return to the central problem of intercontinental warfare.

It is unlikely, in view of the state of modern air detection and defense systems, that the United States would seek to defeat the Soviet Union by strategic bombing with high-explosive bombs. The extent to which the United States did engage in intercontinental bombing in a nonnuclear war probably would determine the extent of Soviet efforts to attack SAC airbases in North America. It is also unlikely that the Soviet Long-Range Air Force would find it profitable to engage in strategic bombing of the economy of the United States. Soviet long-range raids might be made for home morale (prestige) reasons, and also for a purpose which Marshal of Aviation Skripko specified as early as 1946: to tie down military capabilities for the defense of North America.

Naturally, as part of the mechanism of wartime deterrence, such air defense would in any case have to be maintained by the United States, but there might well be a greater drain on the American military effort from the main theater of the Eurasian rimland if Soviet bombers engaged in nuisance raids. Also, there probably would be prestige raids on such political centers and symbols as Washington and New York, to match such American raids as might be made on Moscow, Leningrad, Kiev, and other Soviet cities.

American supply lines to Europe and Asia would be strongly attacked. But on the whole, *the intercontinental mission* would—at least for Soviet strategy—in a general nonnuclear war be relegated to secondary importance. The Soviets could not, in such a war, expect to defeat the United States herself. But they might well anticipate enormous gains in Europe and other areas on the Eurasian periphery. And, *so long as the mutual de-*

terrence was maintained, these gains could be made at assumable—indeed minimum—risks.

### Tactical Employment of Nuclear Weapons

Soviet military writers and authorities, including Marshal Zhukov, have on a number of occasions in 1955, 1956, and 1957 declared that limitation to tactical employment of nuclear weapons is not possible. Moreover, the attempt to distinguish between strategic and tactical weapons or targets is declared "bourgeois propaganda" and "an attempt at criminal deceit of public opinion." American statements about the "precision of tactical atomic weapons" and their use "exclusively against military targets" are said to be fraudulent. Intentions for total war are not excluded, as stated in the official Soviet ground forces journal, *Military Herald*, in March 1955:

*All the discussion of the 'tactical use' of nuclear weapons is necessary to the propagandists of atomic war in order by consecutive steps to lead public opinion to a recognition of inevitability of the use first of tactical atomic weapons, and then of strategic ones. It is quite clear that the first attempt to use this 'tactical' weapon would lead to the mass use of atomic and hydrogen bombs.*

According to Major General F. Isaev, the use of tactical atomic weapons "on a small scale is hardly likely because that would be inexpedient from the purely military and tactical standpoint. Small-scale tactical tasks can be achieved no less successfully with conventional weapons." But there are said to be other reasons also for the inability to distinguish tactical from other nuclear weapons. On 13 April 1955 Radio Moscow declared:

*... the term 'military target' applies to munitions plants, to naval bases, and to railway junctions, all of which are often situated within the limits of densely pop-*

*ulated cities. So it is obvious that the use of tactical atomic weapons against such targets must inevitably result in immense loss of life among civilians.*

Although such statements appear in popular press and radio media (usually written by generals), there is more than propaganda in the theme. In a serious discussion the official ground forces military journal (in July 1955) stated that:

*The radius of [explosive effects of] nuclear weapons and the nature of contemporary military objectives is such that it completely excludes the possibility of their employment only on a 'tactical' scale.*

For propaganda to foreign audiences in particular, but probably reflecting a genuine military-political evaluation, much is made of the fact that, as Major General Talensky put it (in 1955):

*In modern war hostilities extend over huge areas. The zone of combat operations, and, consequently, of the use of armaments, includes a frontline running for hundreds and thousands of miles and extending to a depth of at least 300 to 400 miles on both sides of the front, from the line of direct contact of the troops. The aggressive elements who are preparing atomic war do not intend to wage it in the deserts of Arabia, the pampas of Argentina, or even in our Siberian taiga. They are preparing to carry it on in Europe with its dense population, which in some areas reaches 200 and even more people per square mile. Can it be imagined that in these conditions war and atomic attacks would be limited only to the zone of operations of the troops and would not affect the civilian population? In present conditions the density of the troops, at least in the case of defense, will frequently be much less than the density of the population in the same area adjacent to the field of battle, and the victims among the civilians would be incalculable*

just as the destruction would inevitably be immense. . . there is no difference in the tactical and strategic use of atomic weapons, nor could there be any.

And, what is more important, from the standpoint of the population subjected to atomic attack, there would hardly be any difference whether it is killed by a tactical or a strategic bomb. Both the strategic and the tactical means of atomic attack are equally barbarous weapons of mass destruction which would spell death to millions of people.

Thus Soviet military commentators seek to refute the idea of precision employment of nuclear weapons, the sharp distinction of military targets from civilian populations, and the idea of limitation to a zone of combat operations which would spare civilian lives.

#### Limited Nuclear Employment

Soviet public rejection of the possibility of limitations on the use of nuclear weapons is based, at least in part, on the fact that to accept the possibility would seriously dilute the propaganda campaign for prohibition of *all* nuclear weapons. And it would wipe out any real Soviet hope of a major conventional war. Moreover, the Soviets are well aware that a limitation would relatively favor the West, and the United States in particular. Marshal Zhukov himself reflected this view in his speech at the 20th Party Congress in February 1956, when he stated:

*Recently, political and military figures of the USA have more and more frequently expressed in their declarations the idea that American strategy must be founded on the employment of atomic weapons, as they express it 'tactically,' that is, within the limits of operations on the battlefields and theaters of military operations.*

*The American monopolists apparently understand the reality of retaliatory atomic blows. . . One cannot fight without suffering retaliatory blows. If one wishes to deal atomic blows on the enemy, then he*

*must be ready to receive the same or perhaps more powerful blows from his side. War is an active process of two-sided combat.*

The prospect of a limited use of nuclear weapons would under certain circumstances assist the West to redress the balance of power for wars other than a total one. It is, moreover, possible that in the Soviet view this might encourage us to start limited nuclear wars against the Communist bloc.

Finally, it would create an alternative to any possible situation in which the United States might have to choose between massive but mutual retaliation or none at all, that is, between a strategy involving enormous destruction and one of either Western inaction or likely defeat. The Soviets evidently would not like us to know with certainty that the alternative of limited nuclear war was available.

Nevertheless, there are cogent reasons to support the conclusion that the Soviets might, in fact, agree to limitation to tactical use of nuclear weapons. So long as the Soviet Union gains greatly in propaganda by refusing to accept the idea of limitations, and so long as they do not anticipate an American attack, there is no reason for them to change their public disavowal of the possibility of limiting the use of nuclear and thermonuclear weapons.

The present Soviet rejection of the idea of the distinction between tactical and strategic uses of nuclear weapons does not preclude their recognition of such a distinction in a war, were the United States to introduce it. The reasons are simple: so long as the Soviet Union gains most by complete abstention from the use of nuclear weapons, they will do nothing to encourage an alternative whereby the limited use of nuclear weapons relieves the enemy from facing a choice between a strategy of defeat and one of suicide.

For the very same reason, and again in view of their belief that nuclear weapons are not in themselves decisive (especially when used against properly trained troops), in wartime it would be to the Soviet advantage to "agree" in practice to limitations on use imposed by the enemy. The Soviets themselves might calculate upon Western recognition of the mutual advantages of limitation and themselves initiate a limited (especially local) nuclear war, but the reasons noted earlier for Soviet advantage in nonnuclear war would probably lead them in such particular circumstances to seek, first of all, limitation to conventional weapons.

#### Conditions Precluding Limitation

The only two instances in which limitation would be impossible would be a sudden thermonuclear attack by the West (which means the Western idea of limitations was not serious anyway) or a similar attack by the Soviet Union (a situation in which the Soviets would have decided against limitations). But in all other cases—local wars, and general wars arising in any way other than a surprise strategic thermonuclear attack—the option on limitation would be available, and probably would be initiated or accepted by the Soviet Union.

While the Soviets do not openly admit the possibility of limitations of nuclear weapons to tactical use or the distinction between "tactical" and "strategic" nuclear weapons, in some cases they have perhaps unwittingly slipped into using the term "tactical atomic weapons."

The most significant to date is a statement by Marshal Zhukov in early 1957, in which he flatly declared that "tactical atomic weapons, if they are not barred, will in the next few years be introduced into the organic armament of the troops in place of conventional weapons."

Similarly, while not openly admitting the possibility of "tactical weapons," one Soviet military theoretician has implicitly

revealed not only a form of acceptance of the idea but also has gone on to render an evaluation of the consequences of employment of tactical nuclear weapons. He wrote (in late 1956) that Western "hopes that tactical atomic weapons 'equalize the forces of large and small armies' . . . take the wish for reality." Thus, at least according to that writer's view, use by both sides of tactical nuclear weapons is contemplated with the effect of *not* equalizing differences in strength of conventional forces, with the result that these latter differences might decide the outcome of the conflict.

#### Local War

"The era of local wars is over," according to Major General Pokrovsky. An official Soviet declaration in early 1955 specifically indicated that if *Europe* becomes "an arena of war," such a war "would inevitably develop into another world war." But there are good reasons for doubting that these statements represent the real Soviet expectation or foreshadow future Soviet behavior. The Soviets generally deny the possibility of future local wars (that is, wars limited geographically to some particular theater of operations) because they want to deter the United States from initiating such wars (and, perhaps, from preparing defensively for them). This present denial, however, in no way limits future Soviet initiative or response.

The Soviet Union has, in the past, fought a number of local wars, such as the engagements with Japan at Lake Khasan and Khalkin-Gol' in 1938 and 1939, respectively. In fact, this is the classic Soviet type of limited military action, for limited objectives, and at limited risk. A history of local and peripheral wars is no indication, however, of continuation of such wars in the future, under new conditions. But it does indicate that the Soviets are prepared, under circumstances of advantage to them, to lo-

calize conflicts involving Soviet troops and even Soviet soil.

Future circumstances may make such behavior *increasingly* to Soviet advantage. Three circumstances greatly increase the possibility and danger of future local wars of Soviet aggression. One is American deterrence of the USSR from general war as a means of attaining Soviet expansive aims. Second, is the Soviet *counterdeterrence* of our retaliatory strength to prevent us from using this strength to deter or respond to *limited* Soviet aggression. Calculated risk by the Soviets of American nonuse of SAC in retaliation for local aggression may increase as Soviet offensive striking power increases and the intercontinental ballistic missile appears. Third, if increasing American reliance on nuclear weapons continues, it may be an inducement to the Soviets to engage in conventional local wars under the cover of mutual nuclear deterrence.

In fact, the Soviets occasionally even let slip hints of their interest in nonnuclear local wars. In a radio commentary in early 1967, it was said that so long as "further production and stockpiling of atomic weapons" continues, "any possible armed conflict will threaten to grow into an atomic war with all its terrible consequences. That is why adjustment of the question of banning atomic weapons is so very significant today." Conventional local war is clearly considered possible even if under current nuclear preparations it only "will threaten to grow into an atomic war."

The Korean war offers an example of a local war waged by proxy; a desirable technique when it can be employed without serious risk of extension. But the possibilities for local wars by proxy are very limited, and the risks difficult to calculate, in view of the stated American policy of retaliation, particularly if this policy is clarified as selective local retaliation.

Local wars waged with Soviet forces

would employ standard military capabilities and doctrine. The maintenance of large forces suitable for conventional warfare provides an appropriate basis for Soviet conduct of nonnuclear local wars.

Granting the possibility of local or peripheral wars, the question arises whether such conflicts can occur *with the use of nuclear weapons* and remain "local."

Although available sources do not indicate Soviet views on this question, the Soviet strategic concept does suggest an answer. In view of the Soviet conclusions on the disadvantages to the USSR of a nuclear conflict, it seems improbable that the Soviet Union would *initiate* the use of nuclear weapons in a local war, regardless of the circumstances of the outbreak of the war. The most likely exception might be the extremely remote possibility of a nonnuclear local war launched by the enemy and involving Soviet territory.

### Conclusion

There is another case of greater interest, because it is more likely (although also not probable). If a Soviet sponsored nonatomic local war was converted by the United States into a local nuclear war, it is probable that the Soviet Union would not extend the theater of operations, but would use nuclear weapons locally in reply. Thus a local nuclear war would presumably result from American initiation of the use of atomic weapons in a Soviet fomented local war.

The particular circumstances of any local war would, of course, have to be taken into account, and the danger of a general war ensuing is never eliminated. However, the same reasons which make it disadvantageous for the Soviets to initiate a general nuclear war would probably lead them to avoid a nuclear local war, or if one developed to attempt to localize any peripheral nuclear war which might arise. The Soviet Union, as well as the West, would gain from not expanding the limits of a local war too widely.

# Implications of Vertical Warfare

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**T**ESTIFYING before a Senate Appropriations Subcommittee on 12 June 1957, Lieutenant General James M. Gavin, the United States Army's Chief of Research and Development, stated that the Army was developing a 100 percent effective air defense system which would provide a complete defense—even against intercontinental ballistics missiles. Such a development, offsetting the tremendous gain which offensive warfare made with the advent of aerial bombardment, would continue the cycle of offense versus defense.

The usual trend in military history has been for new offensive weapons to dominate for a period until defensive weapons and tactics could neutralize them to some extent. The atomic intercontinental ballistic missile was generally presumed to preclude an effective defense, and there has been much speculation that this "ultimate weapon" would halt the offense-defense cycle and make any future war "unthinkable." Now with the great advance of the Nike projects (*Nike-Ajax*, *Nike-Hercules*, and *Nike-Zeus*), we are told that not only is a defense possible but that a 100 percent defense is likely. This prophecy is both a promise and a threat. It certainly encourages continued research; it also emphasizes the necessity of an ever-increasing preparedness.

Vertical warfare will be total war in a much more real sense than any previous conflict: it will involve all capabilities and

all territory of all belligerents. It will require a total effort and the victor will be that nation or group of nations which can mobilize the greatest effort in the shortest period of time—or whose defense is more nearly total than that of the enemy.

Warfare—dovetailing the industrial revolution—has undergone three basic phases in the last four generations. From the days of the ancient Egyptians until the Crimean War, a campaign was fought on a small, concentrated scale—a pinpoint dangling at the end of a supply line that often was long and precarious. Even Napoleon's *Grande Armée* of over 550,000 men was essentially deployed in this manner, which condition proved to be its downfall.\*

The second phase was linear warfare on a protracted front often of hundreds of miles. The Civil War was the first conflict which was fought in this manner, such tactics being made possible by drafted mass armies and improved communications. Both World Wars—at least in Europe and on the Chinese mainland—were fought principally in this manner.

Perhaps the main characteristic of these two first forms of warfare was that war moved only in two directions, depth and breadth, and concerned only the surface.

\* The flanking corps of the *Grande Armée* under Macdonald and Prince Schwarzenberg consisted entirely of auxiliaries, remained in the Baltic provinces and Poland, respectively, and were quite ineffective.

*Until military defense against air-delivered destruction is 100 percent civil defense will remain a matter of urgent importance and should have the stature, emphasis, and the support of a fourth military service*

As long as only one- or two-dimensional war was possible, defense was a relatively easy task of erecting a frontal shield. A perfect defense maintained an unbroken ring around the country and averted hostile attacks upon it; an imperfect defense permitted partial hostile occupation and the threat of collapse which would permit the enemy to roam the country at will. Even in the First World War, with the birth of so-called "total war" conditions, the front was a line on the ground, and although war affected all the people of the belligerent nations to varying degrees, it was fought on the "crust."

### Third Dimension Added

The third and final stage is three-dimensional warfare, which has been made possible by the addition of vertical operations. The first harbingers of things to come were the isolated and sparse aerial bombardments of the First World War. For the campaign of 1919, which the Armistice of 11 November 1918 obviated, the Allies had planned more extensive bombardments and even parachute landings.

It was on this state of planning rather than the campaign of 1918 that military thinkers like General Giulio Douhet formulated the tenets of air strategy and that World War II opened. Throughout the operations of 1939-45 the vertical element came more and more into prominence. The Germans used it tactically with devastating effect in Poland, Norway, and in the Dutch-Belgian-French campaign of 1940.

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In the Battle of Britain the Royal Air Force prevented the superior German ground strength from being thrown in against the British Isles.

The Allies, especially the US Army Air Corps, by brilliant and continuous offensive operations crippled German industry and transportation both before and during the campaign of 1944-45 in France and Germany. They so completely disrupted German communications that the German High Command was unable to supply the defenders of the Siegfried Line, let alone an ambitious enterprise like the Ardennes offensive. American vertical warfare achieved such perfection that American planes managed to knock out single enemy tanks.

During the Second World War, and especially during the Korean war, American planes often took a decisive part in infantry fighting for ridges and hills. Both in a strategic and a tactical sense, vertical warfare has become more and more important, and the more it has been perfected, the less of a defense has there been against it. The advent of guided missiles seemed to give an overpowering advantage to vertical firepower. A defense against it is only now coming within the range of possibility, and it will be several years before that possibility becomes a reality.

The present incomplete defense against vertical attack points up more than ever the necessity of reevaluating many of the time-honored precepts of military thinking which, after all, developed in an age when warfare had not yet acquired its third dimension. These widely accepted axioms, based on Clausewitz, may be summarized as follows:

1. The defense is innately stronger than the offense.
2. Victory, however, cannot come as a result of defense, but only after successful offensive operations. Thus a major test of strength always is essential.

3. The *primary* aim of military operations always is the destruction of the enemy's armed forces rather than the conquest of territory, since territorial gains are an automatic consequence of the destruction of the enemy, but the reverse does not follow.

4. The *ultimate* end of war is to break the enemy's will to fight and to impose upon him our will and our terms.

#### Air Defense Difficult

From its beginning aerial warfare has possessed a superior value because at no time has either fire from the ground or opposition in the air been entirely effective in defense against aerial attack. Surface attack on land (and, to a lesser extent, at sea) can be met and turned aside completely; attack in the third dimension often has been weakened but seldom prevented.

The German and Japanese Air Forces were rendered impotent only at a late stage of their defeat, and by the very nature of their element could operate with much less interference than their brethren on land and at sea. When the Luftwaffe was well-nigh defeated, missile prototypes emerged. There was no 100 percent defense against them.

Vertical firepower emerged triumphant from World War II and the Allies instantly saw the great promise of German experimentation with missiles. Combined with the nuclear bomb of America, this development portended a kind of airpower too fast to be intercepted and so destructive that unless a *total defense* could be invented, a new kind of *total destruction* almost certainly would take place. And until recently total defense has seemed out of the question. Thus vertical offense today is stronger than the defense. At least a minority of the enemy air force might get through our defenses and lay strings of H-bombs on our defensive, industrial, and demographic centers. We could do the same to the enemy.

In spite of the possible perfection of the antimissile missile, both airplanes and missiles basically are—and always have been—offensive, not defensive, weapons. Unless antimissile missiles are built in such profusion that they can guard all cities and towns, defense still will be imperfect. If there are not enough missiles at any point under attack, total destruction may result because there is no way of predicting the density with which the enemy would scatter his seed on a particular target.

The prophets of gloom and doom—many of whom probably exaggerate the likely effects of nuclear attack—commonly (and without much substantiating evidence) presume that each side will loose a general Armageddon upon the other on the opening day and that with fallout added to direct destruction no one will recover from this shock. Thus mankind will have committed a kind of mutual suicide. Even time, they contend, cannot heal the wounds of modern mass destruction, and no longer will any place be safe for human habitation. They foresee mankind perishing in the awful triumph of the offense.

#### Are Old Axioms Valid?

Such considerations—even though we need not by any means accept the vaster aspects of this horrible prognosis—must cause us to rethink the axioms of:

1. The relationship of offense and defense.
2. The primary and ultimate aims of warfare.
3. The implications of modern technology for the three branches of the Armed Forces.

Unless and until the antiaircraft and antimissile missiles become both 100 percent effective and so abundant that they are available for the defense of all military and civilian targets, the offense will retain a tremendous superiority. This edge is due to a great extent to the awesome destructive power of even a single weapon

which might penetrate the defensive shield.

The defense—in contrast to past military history—suffers from the necessity that if it is to be effective at all it must be *totally* effective. Perfection, however, always is difficult to achieve. No suit of armor would repel every arrow, no vest will stop every bullet, and no wall will withstand every type projectile and bomb. In two-dimensional warfare, defense did not need to be perfect, for the penetration of small, hostile units into friendly territory was not unusual or serious and, as Clausewitz pointed out, the loss of portions of territory did not greatly matter as long as the army emerged intact—a thesis supported by the Russian campaigns of World War II. But the penetration of one bomber or a few missiles might cause death and damage to an astronomical degree. *Perfection thus emerges as the prime requisite of vertical defense. Unless it is achieved, the offense remains stronger than the defense.*

This fact raises the basic question of the primacy of the Armed Forces. It is still true, to be sure, that the victor will see his own country free and the enemy at his mercy. It is also true that the tremendous strengthening of the offense over the defense makes it all the more essential to smash the offensive capacity of the enemy, especially his air and missile power. But it is equally true that until perfect vertical defense is achieved, an army may find itself with only the ruins of a country to which to return from a victorious campaign. This likelihood exists less in countries which possess defense in depth (like the US, the USSR, China, and India) than in the case of Belgium or Japan, but it is a real consideration.

#### Defense Is the Key

It is generally accepted that the Western democracies are not going to enjoy strategic surprise because they will not strike the first blow.

The survival of an army, navy, and air force in a posture of defense can be as important as ever to the ultimate offensive to win the war. But what follows the initial attack is going to depend also on the condition of the home country which must supply the armed forces with the wherewithal for war.

The armed forces exist for the preservation of their home country; not the country for the armed forces. *Therefore, the defense—of necessity, the perfect defense—of the home country becomes the main object of all warfare. Vertical defense, because of the very power of vertical offense, now is the most vital task of all military and civilian officials.* It is this task which makes even the possibility of 100 percent aerial defense the most important fact to come out of postwar research. Possession of its secret will give us a position stronger than that which we held before the advent of airpower, for we shall then be able to mete out punishment without having to fear retaliation.

At least since the Spanish-American War the United States, by conviction and almost by definition, has been on the strategic defense. This condition exposed us to such calamities as the sinking of our merchant ships in World War I and the sneak attack on Pearl Harbor on 7 December 1941.

At a time when the offense is so much stronger than the defense and when (contrary to 1917 and 1941) the territory of the continental United States is within immediate striking distance of the potential enemy, this defensive attitude constitutes the most serious drawback of our entire position. It gives the potential enemy the certitude that he will determine the time, manner, and probably the place where hostilities erupt, and it virtually endows him with the strategic advantage of fighting on his own terms.

In view of these factors it is most gratifying to note that one of the fastest

growing items in the United States budget is the appropriation for civil defense—the field in which the most could be done toward minimizing the effects of an enemy attack that did get through. Even so, the vital importance of civil defense in the conduct of future war thus far has not been recognized and little actually has been accomplished in this field which is supported with only two or three percent of the appropriations budgeted for the Armed Forces.

Anyone who has studied the effects of Allied bombing of Japan and Germany in World War II and who has extended the analysis to visualize the much greater destruction which could be expected in the first few days or nights of the next big war (more destruction than in the years from 1939 until 1945) must arrive at the conclusion that civil defense is going to be fully as important as the armed services. In fact, for all practical purposes civil defense can be regarded as one of the services defending the country.

The Federal Civil Defense Administration has published the facts on atomic warfare and defense or protection against it. It is easy to obtain plans for shelters and instructions on improving existing cellars. Yet many Government officials and other experts have wondered about the utter lackadaisical attitude of the American public toward this danger. How many of us have bomb shelters in our homes? How many people would know where to run if Red Alarm were sounded? How many people would even recognize a Red Alarm? Where is the public building that could provide shelter in nuclear warfare for the hundreds of people in its offices?

The Federal Civil Defense Administration has been improving fire-fighting and hospital facilities in many parts of the Nation and has tried to ensure proper law enforcement, first aid treatment, and evacuation of threatened areas in case of attack. It has even been called on to provide

disaster relief in flooded or drought-stricken areas. But the Federal Civil Defense Administration cannot force individuals, corporations, and cities to provide for their own protection.

### Logically a Federal Problem

Officially and legally civil defense has been considered largely the business of the states, and some states have devoted much time to civil defense preparations. However, there is not a single major city in the United States today which could be evacuated in a couple of hours or where adequate shelters exist to keep the population from getting hurt.

The survival of any part of the Nation affects all the rest, and the civil defense of any state is as much the business of the remaining states as it is of the Armed Forces.

In the broad view war is waged by the Nation, and if any city in the Nation is bombarded with nuclear weapons, it is because that city is in the United States of America, not because of any local reasons. The responsibility for civil defense would, therefore, seem to rest squarely on the Federal Government. And if the people of the cities with vital industries in them will not build shelters, there is a good case for the Federal Government's doing it, because, although individuals and corporations may wish to gamble with their own survival, the Nation needs their productive capacity. It makes just as much sense, if not more, to defend a city on its own grounds against enemy-caused destruction as to defend it, along with others, on a front overseas, and it is done for the same reason.

That this is the case is demonstrated by the surrounding of many of our cities with Nike installations to ward off enemy attack. After the hostile planes or missiles take off from home ground, the Air Force would try to shoot them down with the long-range *Bomarc* or the plane-to-plane

*Falcon* missile, if not with its airplanes. The Navy would try to get them with its planes, or with long-range *Talos* and short-range *Terrier* missiles, or by the plane-to-plane *Sidewinder* and *Sparrow*. Planes or missiles that got through would be tracked down over the threatened city by the Army's *Nike* weapons. But if a plane or missile managed to destroy any part of the city, rescue, rehabilitation, and emergency service would be largely the responsibility of the state and local governments.

#### A Fourth Service?

Would it not seem much more logical to consider civil defense the fourth of the Armed Forces and put it under the military planning and orders of the Department of Defense and the Joint Chiefs of

Staff? That is the measure for which three-dimensional warfare seems to call.

Such a radically new measure might not be required if we planned to strike the first blow in any future war and if we could be certain that all hostile weapons of aerial offense could be either destroyed on the ground or eliminated in midair, as General Gavin predicts they will be in the future. But until we reach such a state of defensive perfection, and unless we adopt the attitude of unconditional strategic offensive policy, failure to put up the strongest imaginable defensive guard appears an act of incomprehensible lassitude which can be rectified only by the extension of the responsibilities of the Armed Forces and full preparation to make good the promise of instant massive retaliation.

The passive defense capability of our "homefront" is just as important as is the offensive capability of retaliating weapon-for-weapon on the "battlefront." For, from the chemical, petroleum, steel, electronics, agricultural, and hundreds of other industries will come the means of keeping our combat forces effective if they must engage an enemy. Thus a strong civil defense program is just as necessary as is a strong national defense program—not only might it deter an enemy from attacking our Nation, but if he does, a strong built-in defensive system may well make his attacks upon the "homefront" abortive and of little help to his war schemes.

Major General William M. Creasy

# A Case for Behavior Techniques in Command

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**H**ISTORY may well condemn this age for its physical and moral destructiveness in its negation of civilizing factors, its lack of charity and justice. On the credit side, however, this age of destruction has produced something uniquely constructive. It has breached the frontiers of the personality factors which continue to cause great physical and mental suffering. These factors must be recognized in order to utilize the inner strength of individuals. Discovery of the principles which underlie personality integration and disintegration may possibly go down as the greatest achievement of our time.

## Application of Principles

The intelligent application of these principles of behavior can *make* the successful commander. They will help him to arrive at a new understanding of interpersonal relationships. Every successful leader has made instinctive use of these principles, and a working knowledge of them is essential to any intelligent approach to leadership. Lieutenant General Walter L. Weible, Deputy Chief of Staff for Personnel, made the following pertinent remark which appeared in the *Army Information Digest*, February 1957:

*New and more imaginative tactical concepts cannot be executed without imaginative leaders, officers and enlisted, from the*

*squad level to the top of the chain of command. . . . Thus there is little room for the dull clod in our Army of today.*

So long as we have a large standing Army we must recruit from all classes and social strata. This results in an amalgamation of men with divergent levels of education, widely separated cultural backgrounds, a multitude of religious persuasions, high or low motivation, and diverse attitudes toward authority—all to be welded into the pattern of the ideal soldier. There is, indeed, "little room for the dull clod."

An ideal of such dimensions may be practically unattainable. We may achieve some labored success by supplying minimum levels of education. We can pretty well place men in the same cultural milieu. Religion could be a great impetus: it answers the "why" of action, the "for what" of life. That, however, is an area of human autonomy which should be untouchable. The big question of command remains: how to motivate men, and how to activate such a ready response to authority, as to approach the ideal? The answer will complement education, culture, and religion. It will deal in the area of personality. In this area we can achieve a great deal of understanding, and may even augment change, in the total man.

*No commander is expected to fulfill the expectations of all his men, but he can be a good leader if he trusts in their integrity, is consistent in direction, wary of self-concern, and takes time for their needs*

### Emotions Move Men

The basic premise in this science of behavior is that all men emote. Like it or not, much of our behavior is based on sheer emotion. For this reason something more than a transfer of information is needed to effect a change in any soldier, and especially the "problem soldier." Without doubt he already has the information why AWOL is intolerable, or why the order to police the area must be followed with the same acceptance as the order to go on night patrol. Nevertheless, this knowledge somehow does not get through to him. His educational and cultural background are of little help. His actions are poorly motivated. That is why he went AWOL in the first place. He was so wrapped up in emotion that the "intellectual-receiving" and the "information-giving" processes were not effective.

This is not only the case with the "problem soldier," it is true of every human being. Each of us has areas of vulnerability. As the famous psychologist, Dr. C. Gilbert Wrenn, stated in the *Minnesota Journal of Education*, December 1956:

*Emotion is, deny it or not. When you and I are frightened or made angry or become highly excited over something unfavorable to us, our viscera immediately and auto-*

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*matically respond in an appropriate manner. We may control our speech and our actions, but we cannot control the heightened heartbeat and respiration, increased flow of adrenaline and perspiration, inhibition of digestion, and salivation.*

### Emotional Motivation Differs

If only ideas could stand alone. But they depend upon persons to accept, reject, defend, or evaluate. In brief, different persons emote differently, even to the same idea. Therefore, we must insulate the person's area of vulnerability before he can digest the idea. Our corollary then is this: It is futile to strive to fill a position of leadership by treating "all men the same." No leader can treat all men identically. His personality differs from theirs; hence he does not react to each in the same way. They, in turn, do not act like figures on a slide rule. They are persons, and persons *feel* anger and love. Some transference of these emotions is made even when strangers meet. Imagine their strength after a long relationship.

### Defenses

Since the man is not known who can turn his emotions on and off like a spigot, a covering-up process is necessary. The soldier covers discomfort, for example, by cynicism, sarcasm, shyness, or aggression. Oddly enough, the leader, too, reacts with his own "coverup." He could treat all men the same if leadership were purely an intellectual process. It is not, however. Leadership is an interactive process between the leader and the led. The leader who says "I guess I told him" is getting an undesirable self-feeling into the interaction. This blinds him to his primary function as a leader, namely: "Did I tell him in such a way that he could accept it and thereby act upon it?"

Implementing proper interaction is an art. Through it the good leader achieves a certain rapport. In the practice of his art he must call upon his understanding

of human emotions to attain perfection. He may use certain keys to unlock the doors of human emotion.

### Concern

His first key is a true, interior, unfeigned concern for his men. Any person made to feel insignificant or worthless in the presence of his leader will be poorly led.

Concern is not purely intellectual; it is a virtue. It will be felt. The Army is making steady strides toward career attractiveness through benefits, promotion, and security. All these factors reflect concern for the economic outlook of the individual, yet concern over money cannot be primary. If it were, there would never be a rich delinquent.

Surveys in industry and other walks of life prove that economic security is not the motivation which is required for man to do his level best. The soldier who recognizes the sincere concern of his leader will have an inherent gratification in a job well done. He will enjoy accomplishing the difficult, overcoming the obstacle. This will be his reaction to a leader who is concerned about him as a person motivated by feeling.

Each soldier who comes into the Army has undergone some form of education. He has had a basic diet, we might say. It may have been balanced or unbalanced, it may be adequate to carry him through as a topnotch soldier, or it may be of such a highly specialized nature that when the man looks at this new diet of soldiering he loses his appetite. We must somehow adjust the food to his particular taste if we are going to help him accept soldiering. He has not been trained to cope with this new situation completely and may need a special diet.

True, he gets a special diet through guidance in Army training. But again, before he can eat, he has to have an appetite. It takes motive to be eager, alert,

energetic, imaginative, and devoted. These make the good appetite. The artful leader finds methods for enticing the appetite, for releasing and putting into constructive use the power within the individual to digest the teaching and training. Moreover, only if the leader's concern is true and unfeigned will he make the effort to get this food inside the soldier in digestible form.

### Awareness of Self-Concern

To have real concern for his men the leader must be wary of too much self-concern. Does he understand what he is doing? Is he dominating because he actually feels feeble? Is he accepting his men as worthwhile individuals? Will he admit mistakes? Is the central thrust of his leadership to get inside the soldier, the person, to help him get hold of his feelings? Does the leader take the words and the acts of the soldier seriously? How does he conceive himself? As an impressive power figure? As a respected, beloved figure?

Picture a group of soldiers being led through a tactical or technical problem. Each man will have variable motivation to learn. Some will be in different stages of heeding or unheeding, a few even hostile. Now the artful leader here recognizes that he is no longer concerned primarily with the maneuver or the weapon involved; his primary concern is the "feeding process."

He must, if he is going to make these men good soldiers, be person-centered in his approach to them. His self-concern has little place here. He cannot get too focused on information-giving. If information-centered, he is achievement-centered. Self-concern is moving him. Since he can eat the diet his men should swallow it, too. If the leader must force this need to succeed on his soldiers, he is no longer striving to help them. Instead, he is demanding that the soldiers prove he is a good leader.

What are the possibilities that someone has not told these people how to be good soldiers? It is of little use at this point to force information upon them. Dr. Charles A. Curran, of Loyola University, put it nicely in his comments to a faculty of counselors:

*Shoving or pushing more information at people at such a time will only make them freeze and traumatize the situation.*

We may be sure that, above all, soldiers are not inclined to get tied up with the needs of their leader. It is very difficult for a leader to see this. Psychologically speaking, his achievement goal is called projection, and he projects his achievement into his "problem" soldiers. His self-concern vitiates his leadership.

### Trust

From this point of view (knowledge of self) the artful leader senses that he is something more than a heartless director or imparter of information. His knowledge and trust of man is most important. Every soldier can turn out to be much more capable, more reliable, and more astute than believed. It is essential that the leader believes this. Of necessity we must grow to trust the strength in our people. The best leaders have the greatest trust and this inevitably "gets across" to their men. Until the soldier is conscious of this trust he will not be motivated to do his best.

No soldier necessarily wills himself through his tour of duty into a state of love for the service. He, like everyone else, has instinctive defenses such as anger, fear, and withdrawal. The successful soldier finds a better way to control these defenses than the "bad" soldier. The commander must maintain his position of authority—there is no question on this point. But, he must build an atmosphere that is free from threat—an atmosphere of acceptance, of understanding; an atmosphere

that is an invitation for the soldier to speak.

It may appear contradictory, but a practical expression of good leadership is maintaining authority while creating an atmosphere of trust. The result of its application will make the leader more free of himself. As he becomes conscious of the complexes which are present in all of us, his faith is strengthened in the soldier's innate power and dignity, in his reason, his goodness, and his manliness. If the leader denies this, he can foster no hope, no desire in his soldier.

### Time

The leader cannot ignore his men. Proof should be given that "time" is available. It may sound trite, but is it? Any soldier will become quickly aware that his commander "has no time" for him; and with that awareness he becomes less a soldier. By "time" the leader demonstrates respect for the dignity of his charges; he recognizes the value of their work, and implies his appreciation. When the recognition of the importance of "time" becomes a reality, the leader has contributed to another's self-respect. Even more important, he has elevated the other's respect for him.

When, for example, correction is advisable for specific behavior, time is taken on the spot, and the correction is not received as an affront. Finding fault and placing blame are easy, but guilt, being the terrible thing it is, requires the use of one's precious time—lest salt be rubbed into another's wound.

### Consistent Direction

Many of the greatest leaders also have been beloved men because they were able to give consistent direction. They were not vacillating, not overly punitive, and not overly permissive. They were firm, but kindly. Men loved them not because they had self-love or boasted of their dignity,

but because they could make a soldier realize that as a soldier he was as good as the commander thought he was.

With this new esteem of self our soldiers will have a new esteem for their leaders. Any commander who thinks that he has a poor outfit, has one. When the soldier's faith in his leader is destroyed, the soldier's faith in himself is undermined. Psychologists say this goes back to childhood. When a father rejects his son, the father is hated and the son is wounded.

Recognizing the fact that all people screen out what they do not want to hear or see, we begin to realize that, from infancy on, men learn certain patterns of behavior. These patterns have to do with obedience and respect; with our relation to a power figure, to the father figure. Successful fathers are consistent in their direction and ennobling in their regard for the offspring.

A soldier's relation to his superior is colored by his childhood. He has taken into himself the values of parents and the culture in which he was reared. He has learned to be like those parents, to adapt himself to their values. He reaches out for love. If he finds it, he establishes firm ties and draws strength therefrom. Parenthetically, therefore, it would be unfair of the leader to expect of his men a higher code of behavior than he himself is willing to live.

Suppose, however, the soldier had a father who did not love him, who wanted nothing to do with him. However he reacts now, this was what he learned in the past. Unable to establish firm ties because of inconsistent direction and lack of regard, this unloved son brings a 20-year pattern of living to his commanding officer. As a child he was cut off from the power figure, the father. It will not be easy now for him to take on the power values of his commander. He rejects them. He becomes a "bad" soldier. Why? The

most important drive in his life is to become as unlike that "no good father" as he can possibly be.

This behavior is primarily unconscious. How does the soldier approach the leader? With a chip on his shoulder? With arrogance? Demandingly? With passive hostility or anger? Is he a fawning beggar? A fighter? A domineering type? Does he obsequiously agree, while at the same time remaining sullen and uncooperative within? This is how he learned to cope with authority in the years of his development. Only by consistent direction, tempered with "fatherly" regard, will that soldier identify himself with his leader.

#### Realistic Expectations

No commander could possibly be expected to fulfill the wide variety of individual expectations of all his soldiers. Yet to have loyal, competent soldiers we must somehow manage to fulfill at least their realistic expectations. These expectations obviously relate to the father role for the leader. During the conduct of the Menninger Industrial Seminar in 1957, Doctor Harry Levinson, Ph. D., discussing the "Role of the Supervisor," stated:

*When you are in a position of power, when you are in a position of authority, people have these expectations of you whether you like it or not and you can't undo their expectations short of leaving that position of power.*

The good leader, therefore, will strive to balance his power to the needs of his soldiers. He must gratify the soldier's desire for self-expression, and yet help him to conform to what a good soldier should be. He must motivate the soldier's cooperation, yet stimulate his competition. He must elicit the soldier's drives toward duty, and resolve his drives toward pleasure.

What, then, would be the soldier's cumulative concept of his leader, the realistic expectations the leader can meet? We may

establish a reference by looking at a survey which industry recently made. According to this survey the worker expects the following from his boss:

1. Recognition and appreciation of his work.
2. An opportunity to advance.
3. Consideration for himself as an individual.
4. Encouragement.
5. Representation of his feelings to higher authority.
6. Information.
7. An approachable boss.

The basic assumption was that a good supervisor must possess and must exercise power.

Note that the employees do not want their supervisor (just as soldiers do not want their commander) to be a "Good Joe." They do expect him to be able to plan work, to get it started, and to be firm in the attainment of results. These employees were not asking for softness; they were asking to be treated like human beings. They expect their boss to act with concern for them and trust in them. There is no contradiction between this and the authority which must be maintained.

### The Impossible Goal?

These qualities closely resemble what any of us expect of good parents. A good father is not the father who allows his son to do everything he wants to do, nor does he inhibit all spontaneity. That would be crippling to the boy. He would live in an environment that was too lax or too controlled. It is just as crippling or destructive in the Army as in the family. The good father exercises consistent direction. Actually, the good commander is like the good father. His art is not bluster and bravado nor ruthlessness—rather, he senses what it means psychologically to have power over someone. He must be guide, protector, director, and counselor. Doctor Levinson also said:

*It (the father role) implies that we could profitably focus our efforts not so much on the specifics of what we do in relationship to soldiers, nor on the specifics of the environment, but on the total atmosphere which we create in relationship to them. Many mistakes are made by fathers in the course of rearing children, and yet these mistakes really don't make a lot of difference if there is an atmosphere of regard.*

### Proof of the Pudding

All of the above ideas have met clinical test. An interesting experiment in leadership took place recently in the reorganization of a textile business. An intricate change in production methods had to be made in order to meet competition. The workers were divided into three groups. Group one was told exactly what to do and given the production rate. Group two was oriented on the managerial problem, but by delegates. To all in group three management threw open the problem and asked for discussion and recommendations. This group was so closely identified to management that they made the problem their own. The results 40 days later were: a high percentage of personnel turnover and a deficient production level in group one; group two had achieved good production, but the personnel turnover was significant; in group three, not one person quit, no grievances were voiced, and production levels exceeded those previously attained.

People like to be considered worthwhile and responsible. Soldiers do not differ. They will achieve a high level of efficiency and gratification in a job well done so long as their leader is truly concerned about them as individuals, little concerned about self, trustful of their integrity as men, consistent in his direction, and takes time for their needs—all without relinquishing his authority. It is a big order, but possible of attainment.

# VON STEUBEN

## Drillmaster of the Continental Army

Karl Theodore Marx

**I**N A recent dispatch from Heidelberg, Germany, an American Army captain paid tribute to a man who so often is assigned a casual role in accounts about the American Revolution. The accomplishments of this man, however, attested to by George Washington and the Continental Congress, meant the transformation of the Continental Army from a medley of the various state militias into a well-disciplined, homogeneous unit. With a singleness of purpose he unified forms of command and modern methods of combat.

This US Army captain, the son of a German war veteran who had fought against Americans in World War I in the bloody trenches of France, knew what he was talking about when he spoke of repaying a debt to Germany when he now trained German troops to take their place in the vast army of free nations. He knew that it was another version of the "Lafayette we are here" when he faced his first German contingent of trainees in Andernach, Germany, to teach them the American manual of arms—as Von Steuben did in 1778. It is appropriate, therefore, to point out the work of "volunteer" Von Steuben, his task, his results, and also how circumstances made him, the ex-captain of the Prussian Army of Frederick the Great, the mentor of the American Army.

The following letters will show the

progress, the circumstances, and the success of Von Steuben's work. First, it must be pointed out that Von Steuben arrived in the Colonies at a time when the Gates-Conway cabal against Washington was at its height. Its purpose was to unseat Washington in favor of Gates, with Conway aiming to become inspector general, independent of Washington's command. In his recommendations to Congress Conway made one fatal error—an error that made Von Steuben's appointment so much easier—when he recommended that the Prussian system, that is, that of the "great Frederick," be adopted in the American Army. Conway considered Frederick's methods the acme of military efficiency, superior to both the French and English disciplines.

Coincidentally, at that time none other than a veteran of Frederick's campaigns, Von Steuben, was on the high seas, unaware of the furor in the Continental Army, ready and eager to offer just that very knowledge Conway had recommended as the solution. Washington and Conway were anything but comrades in arms—there was more than icy politeness between the two—there was open enmity and certainly a disinclination on the part of Washington to let Conway's methods of approach go unchallenged. When the volatile Conway presented himself to Washington at Valley Forge in December 1777

*The accomplishments of "volunteer" Von Steuben, drillmaster of the American Army, brought about the transformation of that army from a group of state militias into a well-disciplined homogeneous unit*

he felt slighted and returned to York, Pennsylvania, complaining to Congress about his cool reception.

On 3 January 1778 Washington felt compelled to write to Henry Laurens, President of the Continental Congress:

*If General Conway means, by cool receptions that I did not receive him in the language of a warm and cordial friend, I readily confess the charge. I did not, nor shall I ever, till I am capable of the arts of dissimulation. These I despise, and my feelings will not permit me to make professions of friendship to the man I deem my enemy and whose system of conduct forbids it. At the same time truth authorizes me to say, that he has had no cause to justify the assertion, that he was received and treated with the proper respect due his official character, that he could not expect any support for fulfilling the duties of his appointment.*

#### Von Steuben Writes Washington

It is necessary here to interpolate a few words about Washington, the man. We know him as a successful general, as the Father of his Country. Yet Washington was much more than just that. He was a great human being, a man of unusual fortitude of character and purpose. He not only had to fight the British generals and armies, he had to overcome various attempts to belittle and unseat him

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in favor of more glamorous or crafty competitors. Throughout all his personal trials and tribulations he always kept his goal in mind, his one purpose—to free the Colonies from an unjust rule, to defeat his military enemies, and to keep his personal adversaries in check. When Conway tried his coup with Gates against their commander in chief, Von Steuben, who had just arrived at Portsmouth, New Hampshire, wrote to Washington at Valley Forge:

*Sir: The inclosed copy of a letter, the original of which I shall have the honour to present to your Excellency, will instruct you of the motives that brought me over to this Land. I shall only add to it, that the Object of my greatest ambition is to render your Country all the Services in my Power, and to deserve the title of a Citizen of America, by fighting for the Cause of your liberty. If the distinguished ranks in which I have Served in Europe should be an Obstacle, I had rather serve under your Excellency as a Volunteer, than to be a subject of Discontent to such deserving Officers as have already distinguished themselves amongst you. Such being the Sentiments I have always professed, I dare hope that the respectable Congress of the United States of America will accept my Services. I could say more over (were it not for the fear of offending your Modesty), that your Excellency is the only Person, under whom, after having served the King of Prussia, I could wish to pursue an Art, to which I have wholly given up myself. I intend to go to Boston in a few Days, where I shall present my letters to the Hon. John Hancock, Esq., member of Congress, and there I shall wait your Excellency's Orders.*

It is certain that Washington was glad to receive such a letter from Von Steuben, the veteran of Rossbach and other battles under Frederick the Great. Had not Conway and his coterie recommended Prus-

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sian methods and discipline? Had they not extolled them as the acme of perfection? Why not accept the veteran who had served Frederick? Why fall back on another foreigner, Conway, who had served against Von Steuben in the French Army and who knew only by defeat about the superior Prussian discipline? Destiny dealt the cards, as we all know. Conway lost; amid bitter recriminations he resigned and Congress speedily accepted his resignation. Conway had outdone himself when he recommended Prussian methods.

Washington, stung by criticism from the "native" camp about "foreigners" in his army (including the infamous Conway), replied to Von Steuben cautiously:

*Jan'y. 9th. 1778 at Valley Forge.*

*Sir: I yesterday rec'd the honor of yours from Portsmouth inclosing Copy of a letter from Messrs. Franklin and Deane, the original of which I shall be glad to receive from your Hands as soon as it is convenient for you to undertake the Journey. As it will solely rest with Congress to make a suitable provision for you in the American Army, you will be under the necessity of prolonging your Journey in order to lay before them at York Town [York, Pa. where Congress met at the time] the honorable testimonials which you bear of your former service. I return you my thanks for the polite manner in which you express your desire of serving under me and have the honor to be, Sir. . .*

It is rather tempting to lose oneself in details, in embroideries, as this fascinating historic vignette progresses in color and fact. However, we want contemporary accounts, not retrospective evaluation by later generations—scant as they are—to tell us about this interplay of American history, focusing ever so briefly on a German soldier by the name of Von Steuben. He was indeed a soldier, but he also was

a man of varied moods, a most generous spender, perhaps a seeker of soldierly fortune, but most certainly a sincere convert to a new conception of citizenship and government after he had tasted life in America—for he never returned to his home country and he always wrote in enthusiastic terms about his life and experiences here. Let us hear what one of his aides, Duponceau, had to say about Von Steuben, the wrathful. This narrative has to do with Von Steuben's journey from New Hampshire to York, Pennsylvania, to present his credentials to Congress, as suggested by Washington:

*We had been cautioned against putting up at a certain tavern in Worcester County, Massachusetts, not far from the frontier of Connecticut. We were told that the landlord was a bitter Tory, and that he would refuse to receive us or, at least, treat us very ill. We determined to avoid that place if it were possible. Unfortunately, when we were some distance from it we were surprised by a violent snow-storm; it was in the evening, and we were compelled to seek shelter in the very house we wished to avoid. We had not been misinformed. The landlord at once said that he could not accommodate us. He had no beds, no bread, no meat, no drink, no milk, no eggs; all that he could offer us was the bare walls. In vain we remonstrated and prayed. He remained inflexible. At last the Baron [Von Steuben] grew impatient and flew into a violent passion. After exhausting all his store of German oaths, he called in that language to his servant to bring his pistols. Then the Baron, presenting the deadly weapons at the frightened landlord, repeated the questions that he had asked in vain before: 'Have you bread, meat, drink, beds, etc.?' The answers were now such as we desired; we were accommodated with good beds, and a good supper, and our horses were properly cared for. In the morning after our breakfast we politely took leave of our host who,*

though a Tory, did not refuse the continental money in which we liberally paid him. . . .

### Von Steuben Before Congress

Onward they went—from Worcester, Massachusetts, to Springfield, Massachusetts, then to Hartford, Connecticut, to Fishkill, New York, to Reading, Pennsylvania, Manheim, and finally York, Pennsylvania. In Manheim, Pennsylvania, Von Steuben met Robert Morris, treasurer of the American Colonies and close friend of Benjamin Franklin. No doubt, Morris gave him another briefing, advising him how to act when facing Congress, what to say, and what not. From Morris, Von Steuben must have learned about the Conway-Gates intrigues against Washington, for when he arrived in York on 5 February 1778 no other than General Gates wanted him to be his personal guest—and surely not for reasons of hospitality alone. Luckily, Von Steuben knew then what the game was and declined the offer.

Von Steuben then faced what was known as the Witherspoon Congressional Committee, headed by Reverend John Witherspoon of New Jersey and assisted by three more members of Congress who visited him at his abode in York, a fashionable house formerly occupied by John Hancock of colonial fame. Here, again, the fine stagecraft of Benjamin Franklin is discernible, for Friedrich Wilhelm Augustus Heinrich Ferdinand von Steuben handled himself with such skill and tact that all recent resentment against foreign soldiers of fortune was forgotten and he was not even requested to prove his previous military employment or exalted military ranks.

The stiff Prussian ex-officer simply charmed his way through all preliminaries, and came away with the best wishes and the good will of the entire membership of the Continental Congress. Here is what the Witherspoon Committee reported to Congress and Washington:

*The Baron von Steuben who was a Lieutenant General and Aide de Camp to the King of Prussia—desires no rank—is willing to attend General Washington, and be subject to his orders. He does not require nor desire command of a particular Corps or Division, but will serve occasionally as directed by the General. He expects to be used in planning Encampments, and promoting the discipline of the Army. He heard before he left France, of the dissatisfaction of the Americans with the promotion of Foreign Officers, he therefore makes no terms, nor will accept of anything but with the general approbation and particularly that of General Washington.*

On his way from York to Valley Forge Von Steuben and his entourage stopped briefly at Lancaster, Pennsylvania, then a prosperous German town, where they attended a ball in his honor. Here he met among the attending officers Captain William North who later became his aide-de-camp and whom he adopted as his son. North wrote about their first meeting:

*I saw him for the first time at a ball which the citizens of Lancaster gave him. He had been received in the most distinguished manner by Congress, and was then on his way to meet General Washington. His reputation had preceded him, and those who yet remember his graceful entry, and carriage in a ballroom, the splendor of his Star and its accompaniments, can easily conceive the proud feelings of his countrymen, and their fair wives and daughters. With honest feelings, they might have thanked God, that they had no reason to be ashamed of their countryman.*

### Arrival at Valley Forge

Von Steuben arrived at Valley Forge on 23 February 1778. And here his mission began. Lieutenant Colonel John Laurens, son of Henry Laurens, President of Congress, had this to say to his father:

*I was obliged to write briefly and in haste by the last courier. I have since had several long conversations with the Baron von Steuben, who appears to me a man profound in the science of war, and well-disposed to render his best services to the United States. I think he would be the properest man we could choose for the office of inspector general, and there are several good assistants that might be given him. I have the highest opinion of the service he would render in this line, as he seems to be perfectly aware of the disadvantages under which our army has labored from short enlistments and frequent changes; he seems to understand what our soldiers are capable of, and he is not so staunch a systematist as to be averse from adapting established forms to stubborn circumstances. . . .*

Von Steuben now was in his element. He formed a model company, roughhewn soldiers, Indian style fighters, backwoodsmen who had done their fighting as they saw best. Little did they know of formations, drills, weapon care, tactics, marching order, or discipline in general. They were citizens fighting as best they could for their cause and country. But that was not enough. They faced trained soldiers, tactically employed and deployed, versed in all the tricks of soldiering, the handling of all their weapons, including the dreaded bayonets. Bayonet charges were something new to the Continentals to whom a bayonet was largely a convenient utensil when preparing their meals. They were a rough but good-natured lot. They were highly dubious, at first, about this "foreigner" who could speak no English and who needed an interpreter to put across his ideas. But this sweating, swearing officer was something different. They saw him join their ranks, take a rifle, and show by example how to handle it. He did not mind acting as a drill sergeant, rifle in hand, marching, wheeling, and charging. They began to understand, they took

pride in their work and his task. They liked him when he helplessly sputtered in French-German and English his dismay when something went awry.

### Methods Praised

It is to the everlasting credit of Von Steuben that he remained flexible. There was no stiff-necked purpose about him. He adapted his methods of teaching and training as he went along. Whatever he found suitable from the Prussian Army manual he used and taught. His famous Drill Regulations had their roots in his Prussian training, it is true; but they also were the result of planning on the spot, tailored to the needs of a citizen army and the mentality of the men composing it.

Here is what President Henry Laurens, on 7 April 1778, wrote to James Duane, a member of Congress:

*Baron von Steuben has condescended to act as Drillmaster as well as Inspector in Camp. He has hit the taste of the officers, gives universal Satisfaction and I am assured has made an amazing improvement in discipline. A young correspondent of mine, who is a very honest man and not very ignorant and who has always regretted the deficiency of discipline, tells me if I were present I should be enchanted by the change suddenly made in the Grand Camp.*

On 8 April 1778 Colonel Alexander Scammel wrote to General Sullivan:

*Baron von Steuben sets us a truly noble example. He has undertaken the discipline of the army, and shows himself to be a perfect master of it, not only in the grand maneuvers, but in the most minute details. To see a gentleman, dignified with a lieutenant general's commission from the great Prussian monarch, condescend with a grace peculiar to himself, to take under his direction a squad of ten or twelve men in the capacity of a drill ser-*

geant, commands the admiration of both officers and men, and causes them to improve exceedingly fast under his instructions.

That Von Steuben was fully aware of his training difficulties can be gathered from the following letter he wrote to the Prussian Ambassador, Baron von der Goltz, in Paris:

*Believe me, dear Baron, that the task I had to perform was not an easy one. My good republicans wanted everything in the English style; our great and good allies everything according to the French mode; and when I presented a plate of Sauerkraut dressed in the Prussian style, they all wanted to throw it out of the window. Nevertheless, by the force of proving . . . that my cookery was the best, I overcame the prejudices of the former; but the second liked me as little in the forests of America as they did on the plains of Rossbach. Do not, therefore, be astonished if I am not painted in very bright colors in Parisian circles.*

And to his old comrade in arms, Baron von Gaudy, he wrote:

*In the first place, the genius of this nation is not in the least to be compared with that of the Prussians, Austrians, or French. You say to your soldier, 'Do this, and he doeth it'; but I am obliged to say, 'This is the reason why you ought to do that,' and then he does it.*

#### Conway's Resignation

While Von Steuben was performing his monumental task, it must be pointed out, he was still nominally only a volunteer without a commission. Just as Washington so often had to take recourse to his inner strength, his character, and his fortitude in the face of disappointments and intrigues, so Von Steuben had to resort to his indomitable will. There were envious officers around him; there were those who

simply disliked foreigners in the army and who only reluctantly admitted his success, so clearly evident on the fields of Valley Forge. Yet Von Steuben persevered—he never faltered. He revered Washington as he had revered Frederick the Great. As his work progressed, his will to bring it to the fullest measure of success mounted. General Thomas Conway, nominally the Inspector General, finally exploded in a letter to General Horatio Gates on 22 April 1778:

*I do not pretend to be superior to Baron von Steuben as to genius or merit but having been peculiarly employed in training troops to all field maneuvers, having much more practice than he has, speaking the Language, I can venture to say that I would have effected in one month or six weeks, what he will not be able to accomplish in six months. I am ready to take the field if my services are Deem'd Necessary. If they are not, I must represent to you that my honour, my principles, the regard I must pay to my rank in the French army will not permit me to remain idle in a town, while troops are in the field.*

*Therefore, Sir, if you have no occasion for my services I expect Congress will be so equitable as to accept of my resignation. . . .*

Congress rose to the bait and Conway's lefthanded offer of resignation was accepted on 28 April 1778. The job of inspector general now was open. Washington lost no time when the news about the accepted resignation of Conway reached him on 30 April 1778. He immediately wrote to Congress:

*. . . Baron de Steuben's length of service in the first military school of Europe, and his former rank, pointed him out as a person peculiarly qualified to be at the head of this department. This appeared to be the least exceptionable way of in-*

roducing him to the army, and one that would give him the most ready opportunity of displaying his talents. I therefore proposed to him to undertake the office of Inspector General, which he agreed to with the greatest cheerfulness, and has performed the Duties of it with a Zeal and Intelligence equal to our wishes. . . . I should do injustice, if I were to be longer silent with regard to the merits of Baron de Steuben. His knowledge of his profession, added to the zeal which he has displayed since he began upon the functions of his office, leads me to consider him as an acquisition to the service, and to recommend him to the attention of Congress. . . . The baron is sensible that our situation requires a few variations in the duties of his office, from the general practice in Europe, and particularly that they must be more comprehensive, in which, as well as in his instructions, he has skillfully yielded to circumstances. . . .

In the New Jersey Gazette of 6 May 1778 an American officer wrote from Valley Forge:

*The Army grows stronger every day. It increases in numbers . . . and there is a spirit of discipline among the troops that is better than numbers. Each brigade is on parade almost every day for several hours. You would be charmed to see the regularity and exactness with which they march and perform their maneuvers. Last year the troops were so harrassed with marches that there was little discipline among them. It was almost impossible to advance or retire in the presence of an enemy without disordering the line and falling into confusion. That misfortune, I believe, will seldom happen again . . . for the troops are instructed in a new and so happy a method of marching that they soon will be able to advance with the utmost regularity, even without musick and on the roughest grounds.*

On 7 May 1778 Lieutenant Colonel John Laurens wrote to his father:

*Yesterday we celebrated the new alliance (with France) with as much splendor as the short notice would allow. Divine services preceded the rejoicing. After a proper pause, the several brigades marched by their right to their posts in order of battle, and the line was formed with admirable rapidity and precision. Three salutes of artillery, and three general discharges of running fire by the musquetry were given in honour of the King of France, the friendly European powers, and the United American States. The order with which the whole was conducted, the beautiful effect of the running fire which was executed to perfection, the martial appearance of the troops, gave sensible pleasure to every one present. The whole was managed by signal and the plan, as formed by Baron de Steuben, succeeded in every particular which is in a great measure attributed to his unwearied attention, and to the visible progress which the troops have already made under his discipline.*

#### Conclusion

On 5 May 1778 Congress resolved:

That Congress approve of General Washington's plan for the institution of a well-organized inspectorship.

That Baron von Steuben be appointed to the office of Inspector General, with the rank and pay of Major General, his pay to commence from the time he joined the army and entered into service of the United States.

And on the evening of 6 May 1778, after the Grand Review had been over, Washington assembled his officers and their ladies about him, then proffered a toast to the unsuspecting Von Steuben, not "as a lieutenant general in foreign service but as Major General Baron de Steuben, Inspector General of the Army of the United States."

# NOBODY FIGHTS ALONE

Colonel Hughes L. Ash, *Infantry*  
Faculty, U. S. Army Command and General Staff College

**T**HE nature, locales, and possible forms of future warfare are subject to much contemporary debate. Amid all the discussion, however, there stands the militarily significant point that there is a strong probability that the United States will not fight any future war alone, but as a member of a coalition or alliance. Such a coalition could vary from a two-nation effort resulting from one of our numerous bilateral arrangements to military operations conducted under the directorship of the United Nations.

Coalition warfare is almost as old as conflict itself. From Biblical days to Hannibal and, finally, to General Mark Clark as Commander in Chief, United Nations Command in Korea, wars have been waged by varying numbers of partners with varying degrees of success. Historically, coalitions have produced strange bedfellows and challenging problems. Held together by the compelling mutuality of defeating a common enemy, coalitions are continually subjected to the debilitating effects of divergencies in national interest, aims, and objectives. Coalitions may fail altogether because of these conflicts. In contrast, they may be too successful, as was the strange alliance of West and East which overwhelmed Germany in World War II, only to create a vacuum for Communist imperialism.

An examination of some typical coalitions raises some interesting points for the student of future warfare.

## Conduct of a Coalition War

The Alliance of Chaumont, 1814, pledged Russia, Austria, Prussia, and Great Britain to oppose Napoleon with 100,000 men each. No centralized command or staff structure for planning, directing, or controlling their combined efforts was provided. Heads of state traveled with their armies in the field. Conflicting political objectives promoted a successive series of partner clashes. This lack of unity of effort permitted Napoleon to postpone inevitable defeat for another decade.

Germany was by far the dominant figure among the Central Powers in World War I. Unity of command for this war was vested in the German forces. Yet only limited control was achieved due to a lack of mutual knowledge and the absence of mutual respect, confidence, and understanding. However, since the other countries respected the eminence of Germany, she became a virtual arbiter for international disputes among the coalition members. Divergent national considerations and principles precluded centralization of logistics. Throughout the entire war the military operations of the Central Powers were hamstrung by language barriers and conflicting customs.

Allied efforts in World War I were long frustrated by jealousies, distrusting, double dealings, political differences, and absence of unity and coordination. There was no over-all strategy or political direction of Allied effort. Only in the final phase of

***The successful military proponent of a coalition strategy must study the strengths and weaknesses of prospective allies, possess a desire to understand them, and determine the best role for each in future war***

the war was unity of command achieved, and even then, only on one of four Allied fronts. Foch, the eventual Allied Supreme Commander, considered that his principal problems, other than Clemenceau, stemmed from each commander's concern for the preservation of his own forces and the consistent refusal to subordinate national interests to Allied requirements.

Not until the Beauvais Agreement in April 1918 did Foch gain any semblance of effective control of Allied forces. By this pact Foch was charged by the British, French, and US Governments with coordinating the action of Allied armies on the Western Front. While his powers included strategic direction, national commanders retained full control of tactical employment plus the right of appeal to their own governments if they deemed Foch's directions to jeopardize the safety of their forces. Indeed, this was command by compromise.

### World War II

In World War II the Axis Powers had no over-all strategic plan. Each country pursued its own political objectives in its own sphere of influence. Declarations of war were unilateral. Even the presence of German staff missions with the Italian High Command and principal field commands failed to achieve unity of German

and Italian effort. Nothing resembling a combined chiefs of staff was used. Typical of partner difficulties were Italy's declaration of war on Greece without consulting Hitler, and German-Italian relationships during the retrograde in Russia. In the first instance, unilateral action by an ally committed Hitler to an area of operation for which he was not prepared; in the second, the already tenuous mutual trust virtually was obliterated. Hitler's failure to coordinate the combined efforts of his own and allied forces completely forfeited the advantage of preponderant strength.

Allied conduct of World War II is a well-known and well-told story. The student of contemporary history has access to volume upon volume of memoirs and personal accounts which set forth the thinking processes of countless important decisions by both our political and military leaders. In these volumes all Allied viewpoints have been set forth, including a splendid cross section of professional views.

General Marshall has pointed out the significance of Churchill's early trip to the United States in December 1941. He and his British chiefs of staff came to discuss British-US war relations with the President and our military leaders. As a result of this meeting the combined chiefs of staff was established. (This also caused the creation of our own joint chiefs.) Immediate strategy for the combined conduct of the war and policy for future strategy and control promptly were formulated. Marshall credits the combined chiefs with the unity of effort achieved in the war. The control and coordination effected in the fields of intelligence, manpower, munitions, allocation of forces, materials, and shipping stand in victorious contrast to the divergent efforts of the Axis Powers. From the outset the US and the British launched their coalition with a unity of purpose.

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The combined chiefs of staff had both US and Allied personnel in all their committees. These committees paralleled the national joint chiefs' structures: plans, administration, intelligence, transportation, communications, munitions, and civil affairs. The height of combined chiefs' activity occurred at the various conferences of the chiefs of state such as Casablanca, Cairo, Teheran, and Quebec where the operation of the combined staffs permitted an Allied military view to jell and facilitated the formulation of many on-the-spot decisions in final form.

### One Command

The Western Allies achieved unity of command during World War II to the most effective extent yet known in coalition warfare. In the early days of American participation, only the US and the British were primarily concerned, although other countries participated in some of the conferences and the British made use of Canadian personnel in their portion of combined staffs and commands.

In Operation *Torch*—invasion of North Africa—Eisenhower as Commander in Chief, Allied Expeditionary Forces, was responsible to the combined chiefs of staff and received all his directives from that body. He was authorized direct communication with joint staffs of both countries and was given supreme command of all forces—Army, Navy, and Air. His basic directive from the combined chiefs specifically stipulated adherence to the principle of unity of command. The traditional right of appeal by a national commander to his own government was practically eliminated. Commander, British First Army, was instructed by his own government to accept all supreme orders, but to inform his government should he appraise grave and exceptional circumstances likely to result therefrom, provided that his action in so doing did not jeopardize the Allied effort, and that he advise the su-

preme commander of his contemplated action.

In Operation *Overlord* the combined chiefs, pursuant to directives of their heads of state, designated General Eisenhower as Supreme Commander, Allied Expeditionary Forces. In this command all forces were grouped by service component, rather than by national groupings. The supreme commander retained personal command of ground forces, but utilized an Allied commander for both air and naval forces. The Supreme Headquarters Allied Expeditionary Forces staff was both "allied" and "joint." An unusual feature about the SHAEF staff was the inclusion of political officers and the attendant political and governmental problems anticipated in the liberation of Nazi-dominated Europe.

The war ended before any widespread employment of Allied forces occurred in the Pacific. However, the principle of unity of command was followed in the Allied efforts in the China-Burma campaigns. The maintenance of separate commands under MacArthur and Nimitz will long be debated, with liberal examples tending to prove that cooperation is a poor substitute for positive command relations. A supreme command concept was contemplated for the actual invasion of Japan and was pursued in the occupation.

### Advantages of Coalition Warfare

The frequent and glaring defects of the coalition as a mode of strategy tend to submerge the advantages inherent in the concept. The ancient cliché of "strength in numbers" readily comes to mind. By an alliance, smaller or weaker nations, incapable of resisting the overtures of a larger state, find the aggregate strength to stand up for their rights, rather than bow to the whims of the big fellow in individual appeasement.

A well-organized coalition can be economical. While no single nation might be

inclined to bear the expense of a large defense establishment, several nations can defend themselves economically by pooling their resources. Additionally, this concept permits selective pooling of resources, wherein each partner may contribute according to his means and in the field for which he is best adapted or best prepared. This is a rather theoretical concept, not yet achieved to any great degree of practicality. However, the contribution by one nation of naval, air, or so-called technological support to an alliance where the others might furnish the preponderance of other force requirements is an example—good or bad—of this thought.

A properly conducted coalition war has the capability of coordinating several otherwise divergent efforts against a common enemy. The absence of a strong *motif* for the coalition, however, can well result in each country seeking to preserve its own forces and to attain its individual objectives. Therefore, if several nations contemplate warring on a common enemy, the most economical and most effective mode is the adoption of a common strategy pursued through combined effort in which divergence is not permitted.

Finally, a coalition, regardless of whether offensive or defensive, marshals a portion of world opinion in its support. Thus even the most vicious aggressor, if he has a few allies, is not condemned unanimously by his fellow states. Certainly, a coalition of the diversity and stature of NATO has much of the weight of world opinion in its support. Equally recognizable is the impact of this already marshaled world opinion on the actions of nations whose interests conflict therewith.

#### Disadvantages of Coalition Warfare

A haphazard itemization of weaknesses observed in a historical review of coalition warfare could be most misleading to the student of warfare. In considering

disadvantages of the coalition as a mode of warfare, it is wise to recognize from the beginning that a coalition by its very nature is susceptible to a multiplicity of weaknesses. Rather than diminish the acceptability of coalition warfare these historical weaknesses should form the basis for future improvement.

Basically, a coalition possesses the organic weakness of being a composite affair—a temporary expedient—rather than a permanently integrated organization. No one single member calls the signals. Rather each has his objectives, his strengths, and weaknesses. All have a common enemy or a common goal. The principal problem is to achieve a system of direction wherein the conflicting interests can remain subservient to the overriding common interest to which the coalition is dedicated. This disadvantage is labeled the problem of sustained cohesion.

A second disadvantage of coalitions stems from the first. This is the problem of continuous acceptable directorship. Obviously, the problem here is greater than that of a single or at most a bilateral or tripartite effort. The Western Allies in World War II were in constant fear that Russia might not stay in the war; they were concerned lest Russia refuse to enter the war against Japan.

On the other side, it now is fairly apparent that Stalin was apprehensive that the English-speaking partnership might conclude the war with Hitler without taking him into their confidence, and that he was most anxious to get on the winning side in the Pacific for whatever he might pick up for free. This lack of mutual trust resulted in the English-speaking partners learning for the first time in October 1944 of Russia's actual war plans against Hitler. Until that time the combined chiefs referred to efforts on the Eastern Front as basic assumptions. Churchill points this out significantly in his *Triumph and Tragedy*. At best, then,

the over-all directorship of the total Allied effort in World War II was one of compromise. At no time was Russia a genuine partner supporting a slate of mutually agreed upon political and military objectives. Perhaps it was the best arrangement possible under the circumstances.

The important point for the military student is to recognize that the lack of political unanimity in a coalition war may greatly hamper unity of military effort or direction of military effort. If a coalition is to remain just that, then the political views and objectives of all members must be considered in determining military objectives.

A further disadvantage of coalition warfare is found in the actual implementation stage. Assuming an adequate degree of cohesion to permit the acceptance of a set of allied objectives and a structure for directing the allied effort, the task of fighting this coalition force must then be undertaken. The problems are limitless and cover the fields of national, political, and military strategy and support.

#### Lessons From Past Coalitions

What does this review of past coalitions mean to the militarist of the atomic age?

First, the contemporary configuration of international power necessitates that the military planner adjust his thinking to the probability that most future wars undoubtedly will be coalition efforts. Even in so-called brush fires, no nation is likely to chance provocation of global war without the reassurance of a goodly segment of world opinion through some type of coalition.

Next, for a coalition to have a reasonable chance for success, there must be over-all agreement among the participating governments on objectives and limitations, if any, to be imposed upon the coalition effort. Obviously, at governmental level the method of directing the effort must be established. Ideally, from a mili-

tary view, the governments would agree on what is to be done, the participating share of each partner, and the selection of military directorship; then, the allied military command could proceed, with a moderately free hand, in the formulation and execution of the military strategy. Actually, it can never be expected to be that simple.

History indicates that the military will be fortunate indeed if they are presented with reasonably clear-cut political objectives accompanied by continuing unanimity of political direction as the war progresses. In his *Crusade in Europe*, General Eisenhower pointed up this continuing problem when he described Churchill's attention to military operations as making him "a virtual member of the British Chiefs of Staff."

Mutual trust is an absolute prerequisite to allied success. This trust must take the form of trying to understand the other fellow's point of view; of strengthening his weaknesses rather than criticizing them; refraining from national comparisons; conducting operations and arriving at decisions from an allied viewpoint rather than a national one; of being willing to learn something from the other fellow, regardless of the relative stature of his country; and a willingness to share views and make the best use of available facilities and resources, rather than adhere blindly to your own basic doctrine. General Eisenhower considered that one of the greatest products of victory in Africa was the welding of Allied unity, finding the command team, and creation of a genuine trust and unity.

Finally, the military man must enter coalition warfare with the full recognition that, more so here than in any other type of war, there is no readily recognizable sharp dividing line between the political issues and the sphere of the military. The successful military proponent of a coalition strategy must be well-grounded in

his knowledge of his allies; he must possess a desire to understand them. Under no circumstances can he give way to the brash—and sometimes understandable—impulse to go it alone. He must be prepared to work with the civilian heads of state and have an awareness of the impact of his military operations on the ever-changing political situation. He must cheerfully and freely accept the mandatory direction of war by his civilian superiors, with the learned understanding that national differences may, after all, subordinate his military wishes to the postwar situation.

### Conclusion

Among the requirements, then, for professional military men in preparation for coalition war are included a study of coalitions as to strengths and weaknesses; a knowledge of government; and a keen study of prospective allies, accompanied by an intense desire to understand them and to determine the best role for each in future war. An open mind, well-informed, supported by a flexible approach is as important to the successful outcome of future conflicts as is the proper employment of forces.

The strength of the great mutual security system in which the United States is associated with 45 other nations around the globe appears to have convinced the Communists that, for the time being, at least, they cannot profit from overt aggression. Our own defense team—our magnificent Army, Navy, and Air Force—is the keystone of this whole mutual defense structure. Nearly half the strength of the United States Army is deployed overseas in 75 countries and foreign areas. Our Army combat troops are standing shoulder-to-shoulder with the men of our allies along the frontiers of freedom—the Iron and Bamboo Curtains—in Europe and Korea. The presence of our soldiers stimulates the morale and stiffens the resistance of our friends by constantly reminding them—not in mere words but in the solid substance of American men and American armaments right there with them—that we are in this crusade for peace together, and that we intend to see it through together. In addition, the constant, visible evidence of our strength and resolution has a very discouraging effect upon any new plans the Communists may have to extend the bounds of their empire of fear by armed aggression.

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The effectiveness of NATO is not determined alone by the number of divisions, planes, and ships available for defense. More importantly, it is reflected in the unity and cohesion that has been built up among its members. By working together, each becomes more powerful than it could possibly be alone. The strength and vitality of the NATO alliance stems directly from the recognition of a common need, and the putting forth of common effort to meet that need. NATO has not weakened the independence of any member nation. On the contrary, it has enhanced the ability of each member to maintain its national integrity. Because we stand together against the menace of Communist aggression, we individually attain new stature.

*Secretary of the Army Wilber M. Brucker*

# The Army of the Future

Major J. H. P. Curtis, MC, British Army  
The King's Royal Rifle Corps

*Powerful, compact fighting divisions of all arms are what we need for unlimited nuclear war, capable of sustained fighting without reinforcement and with their own nuclear artillery and short-range missiles.*

—Field Marshal Lord Montgomery of Alamein  
Lecture to the Royal United Service Institution  
10 October 1956

*Atomic warfare requires a reevaluation of tactics and organization employed by ground forces. In this installment, the first of a two-part article, Major J. H. P. Curtis, British Army, analyzes the changes and modifications to current tactical doctrine required by the employment of tactical atomic weapons.—Editor.*

**D**URING recent years there has been singularly little disagreement among military thinkers as to the broad principles which should govern the equipping of an army for nuclear warfare. Field Marshal Montgomery's statement quoted above was not a new concept: he was merely emphasizing a policy which already had been given serious study in both the British and American Armies.

The real problems and controversies arise, however, when an attempt is made to translate these principles into fact and actually to produce units capable of fighting this hypothetical nuclear war.

Although it is generally agreed that the advent of nuclear weapons marks a complete revolution in the history of warfare,

the evolution of new tactical doctrines and organization has been slow. We have seen the first stage—the superimposing of atomic weapons on the conventional formations. We now are at the second stage where, in both the British and United States Armies, we are gradually modifying our formations to suit the new weapons. That the process is slow is not surprising. In peacetime not only are the financial restrictions severe, but also there is no practical experience on which to base each tentative step.

We cannot, however, afford these expensive trials and reorganizations much longer. We must think clearly, look into the future, and, having the courage of our military convictions, decide once and for all what types of tactical atomic weapons will be available in the immediate future, and what tactical restrictions these weapons will impose. Then and then only can we decide upon the organization of our fighting formations.

This article is based on the firm belief that small atomic weapons will shortly become available in quantity at the lowest tactical level and that the artillery arm will, in consequence, dominate the battle-

*We must look ahead clearly and boldly into the future to determine the types of tactical atomic weapons needed and the corresponding changes in organization required to employ such weapons most effectively*

field, just as the rifle, the machinegun, and the tank have each in their turn dominated it in the past. The revolutionary effect on tactics of this contention is discussed in the first part of the article. The logical outcome in terms of the type of units we shall require to implement these tactics is set out in detail in the second part.

### Impact of Atomic Weapons

#### *Tactical Atomic Weapons*

Atomic heavy guns and surface-to-surface ballistic and guided missiles are a reality. One such gun and a half a dozen shells now can obtain the same effect on the battlefield as could only be produced by many hundreds of guns in the last war and then only after days of preparation, positioning of thousands of tons of ammunition, and hours of sustained firing. Moreover, although the local effect of the atomic explosion is annihilatory, it is possible, even with the present system of discharge, to explode a small shell as little as two miles in front of the forward troops, provided they are forewarned and dug in for protection from the blast and flash.

It is a logical surmise that the explosive charge can be progressively reduced until it can be fired from the equivalent of the present field gun. The specification

for such a shell might be all-round devastation within 500 yards of the point of burst and a safety factor for our own troops, suitably protected, of 1,500 yards. To fire such a shell a self-propelled gun on the lines of our present field or medium artillery with a maximum range of 15,000 to 18,000 yards would be all that we should require. Recent reports indicate that such a weapon already is beyond the experimental stage in the United States. We can expect, therefore, a complete range of atomic weapons capable of placing their missiles anywhere from one to a hundred miles beyond the frontline. These are army weapons. Beyond that the air force, with long-range rockets or 1,000-mile-an-hour bombers, will penetrate to the farthest corner of the enemy's territory carrying either nuclear or thermonuclear missiles.

#### *General Effects*

The consequences of this ability of both sides to produce atomic bombardment on any part of the battlefield and beyond it will be threefold.

First, any easily definable target such as docks and railheads, base installations, large headquarters, or administrative transport is certain to be subjected to early attack and destruction. We can no longer rely on the lavish administrative backing which has been accepted as essential in the past. It is this factor above any other which will dictate a radical change in the future organization of our fighting formations, depending as they do now on a weight of logistical supply of at least 300 tons per division per day.

The second effect of fundamental importance is that any force that concentrates sufficiently to be effective against conventional attack, and which rigidly identifies itself with a particular piece of ground can be destroyed by an atomic bombardment which can be produced in a matter of a few hours. Conversely, if a defensive force disperses sufficiently to

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avoid presenting an atomic target, it becomes ineffective against conventional ground attack. A compromise will be of no avail for should any part of the defense produce a point of vital resistance, no matter how small it may be, it will merit an atomic attack. The Spartans at Thermopylae are the perfect example of an atomic target, although they numbered but 300 infantrymen.

The conclusion to be drawn is that any attempt to hold ground by means of fixed defenses will be doomed to failure.

The defensive tactics of the army will have to be based, therefore, not on *holding* ground but on *denying* it. Denying ground can be defined as "selling ground dearly." The atomic armory will ensure that the price to be paid will be very high if indeed any ground is lost at all.

The final effect of importance is that the nuclear war will be a short one. The exponent of strategic airpower will promise a decision in 48 hours. The pessimist will, however, recall those who in 1914 and 1939 said, "It will be over by Christmas." The truth is impossible to foretell. Nevertheless, so long as our national existence depends on heads of governments and huge populations huddled in great capital cities, on sprawling miles of factories and complex networks of railways and harbors, the decisive phase of a nuclear war will occur in the first few days or weeks. Meanwhile, the long-range offensive air weapons will have the advantage over the defense and as the Americans so clearly appreciate, it will be the country which gets there "the fastest with the mostest" that will, by forcing an early capitulation, save itself from annihilation.

Fortunately, these three major consequences of nuclear warfare are complementary. The introduction of tactical atomic weapons to combat units will provide the means for reducing forces in size and weight and, at the same time, increasing their firepower. Smaller forces and a

short war will enable us to obtain a higher degree of self-sufficiency and thus become far less dependent on a vulnerable line of communications. Air transport will then become a practical proposition for the supply of the smaller quantities of vital materials that will be required.

Since an early decision can be expected from the strategic air bombardment, the army will no longer have the traditional task of holding the enemy at arms length for an indefinite period until the nation's resources can be mobilized. Instead, it will have to cope with a short period of intensive operations, the defensive stage of which may last only a few weeks or even days. Thereafter, as soon as the strategic air attack has begun to take effect we will move immediately into the decisive stage which certainly will involve offensive action on the ground. In the last two wars it took two years to reach the offensive stage and two more to complete it. In a future conflict the final outcome will depend upon the ability to win the strategic air battle and win it quickly.

It may be that both sides will be equally prostrated by this mutual bombardment. We may then find two armies fighting each other for the last remaining remnants of civilization and industrial power, like two Bedouin tribes fighting for an oasis. In such a case the army which is the least dependent on its home factories and vulnerable land or seaborne line of supply, is the best equipped with atomic weapons and ammunition, is the quickest to exploit an attack, and the most elastic in defense will be the victor. Undoubtedly, therefore, it must be powerful, compact, and capable of sustained fighting without reinforcement. If it is otherwise, it will not long survive, let alone win, a nuclear land battle.

#### *Effect on Organization*

The nuclear weapon will force a reduction in the scale of land warfare simply because the massive installations, head-

quarters, and supply system of the present military structure are too vulnerable to survive for even a few hours after the opening of hostilities. This need not mean, however, that the strength, in its true sense, of the frontline troops will suffer in proportion. The power of the tactical atomic weapon will be the means of immeasurably increasing the firepower of the fighting units while, at the same time, allowing enormous saving in manpower and materials, as will be indicated later.

Only a general streamlining of the combat formations and a radical change in their present weapons, communications, means of propulsion, and way of living can produce the conditions which will lead to the virtual revolution—for that is what is required—in our present command and logistical structure.

Is this so impossible of realization? Already where we formerly needed 100 guns and 10,000 shells, one gun and one shell is sufficient. A hundred conventional guns today require hundreds of officers, thousands of men, and over 600 vehicles to maintain them in the field; thousands of gallons of fuel to keep them mobile, and tons of rations to feed the men for even a limited period. One atomic gun requires a fraction of this logistical effort.

This potential saving in logistical support requirements can be increased, but only by bringing the atomic shell to the close support stage and relying upon it entirely. If we can eliminate the present need for hundreds of 50-ton tanks on the battlefield, we shall have gone far toward solving the problem.

### **Effect on Armor**

A force of tanks is logistically the most uneconomical of all arms and is justifiable only so long as it is the only means by which we can:

1. Dominate the battlefield in mobile warfare.
2. Provide effective support to infantry in both attack and defense.

In order to maintain its ability to carry out these two roles the tank has developed during the last 25 years from a fast, light, and, therefore, highly mobile vehicle mounting small guns to a 50- or 70-ton monster whose size is dictated by the need to carry a huge high-velocity gun, the primary purpose of which is to destroy enemy tanks.

At sea the capital ship and in the air the bomber have followed the same trend. Both have increased to the limit of their practical size in order to improve their means of delivering bigger and more powerful loads of conventional high explosive. The atomic missile has reversed this trend entirely. One submarine now can carry the destructive potential of a battle fleet, one airplane the power of a bomber fleet. On the ground the same principle soon will apply. Domination of the battlefield, hitherto achieved by large numbers of tanks, now can be obtained by a handful of atomic guns. One such gun will have a degree of mobility, flexibility, and destructive power far beyond that which is possessed by 100 tanks. In short, the atomic weapon epitomizes the principle of economy of force.

It is, however, the logistical factor which will ultimately drive the tank, as we know it today, from the battlefield. The logistical effort required to maintain a force of 50-ton tanks in battle is enormous. An armored division requires 500 tons of fuel to move 100 miles. It can fire 200 tons of ammunition in one short engagement. A huge bridging train must be transported forward if a riverline has to be crossed. Large recovery vehicles are required. Heavy engines, tracks, and gear boxes must be kept well forward to replace those worn out after every few thousand miles of track running. Even the  $\frac{3}{4}$ -ton tank gun barrels require changing after firing a limited number of rounds.

The tank has developed in an era when the administrative services could still cope

with every new demand made upon them by the tactical requirements of the fighting troops. This era of administrative plenty began when the railway was first put to military use in the middle of the last century. It was the railway which in the First World War made possible the deployment and maintenance of the huge armies which faced each other in Europe for four years. In the last war it was again the railway, made flexible by the added use of motor transport, aircraft, and ships, which coped successfully with the demands of the mobile armies. Now all these forms of transport are seriously threatened. As the range, accuracy, and availability of the ballistic missile increases we shall be forced to reduce the size and scope of our administrative systems. We shall then reach the stage, similar to that which obtained 150 years ago, when the administrative potential dictated the size of the fighting forces instead of "vice versa."

In nuclear warfare armor soon will be deprived of the vast quantities of fuel, ammunition, and spares on which it depends for its fighting power. Then, like some great reptile of the prehistoric era, deprived of the lush vegetation on which it once thrived, the heavy tank gradually will become extinct and its skeleton will be found only in museums.

A few years ago there occurred a spirited controversy between those who advocated that the majority of our tanks should be highly mobile and, therefore, lightly armored and gunned, and the orthodox school who maintained that to lose tank versus tank gun superiority was to lose the battle. The combination of these two theories now is within our grasp. The development of a mobile antitank weapon on the guided missile principle will eliminate the need for big tank guns. The self-propelled atomic field gun will provide the hitting power without which mobility by itself is useless.

It should be possible, therefore, in the future to dispense with the big tank altogether. Its place will be taken by lightly armored vehicles which derive their main hitting power from atomic field artillery working in close support. Their local protection will be provided by vehicleborne guided antitank missiles and conventional weapons. The main task of these armored vehicles will be to provide, both in attack and defense, information and local protection for the artillery observation officers and to exploit the results of atomic firepower. Infantry support will be essential to provide the protective and offensive reconnaissance without which armored vehicles cannot perform at night or in close country.

### The Defensive Theory

Provided one accepts the conditions that the defense objective can no longer be to stop the enemy dead in his tracks, it appears that a light mobile force equipped with atomic artillery will be more than a match for any enemy who bases his strength on numbers or weight of conventional metal. The enemy may be dispersed, but somewhere behind a hundred heavy tanks will be a hundred vehicles carrying fuel and ammunition. Behind those vehicles there are large dumps and beyond that again are the refineries and factories. All are being continually sought out and brought under nuclear attack.

The tactical value of ground will not change. Defiles, as in the past, will be of immense value in forcing the enemy to concentrate and provide profitable targets for atomic missiles. Riverlines with their bridges blown will be certain to produce the targets required. High ground, particularly in open country, will give the observation needed to inflict heavy casualties on an advancing enemy. In front of any such position a few well-placed atomic missiles, equipped perhaps with special defensive charges designed to pro-

duce maximum gamma ray contamination, may inflict many hours' delay and innumerable casualties on an enemy who is not fully equipped to detect the unseen dangers of nuclear radiation.

At night the infantry will come into its own. Its task will be to do by night what the armored vehicles did by day. Reconnaissance patrols will be working forward to discover likely targets for the following day. Standing patrols will be watching the possible lines of advance to give warning of an enemy approach. Night poses many defensive problems. These problems may be largely overcome, however, through the use of new radar and infrared devices. In any case, the night patrol line once penetrated in strength will be trained to slip away, calling down a defensive fire of atomic shells as it does so. In this technique of defense, much will depend on making the enemy keep his distance by day, so that any night advance on foot will have to cover a great distance before reaching the patrol line thereby reducing the possibility of a penetration in depth. The delineation of such a penetration and the counterattack with atomic fire will, in any case, be one of the most profitable forms of inflicting casualties on the enemy.

Strategically this defensive concept is similar to that of the Germans in 1944. The German generals knew that their armies could not withstand the advance of the Allies on all fronts. They attempted to keep their armies intact by withdrawing gradually across Europe hoping that in the meantime their V-weapons would turn the scale. If those weapons had reached the stage which they have today, and had the V-2 been equipped with an atomic warhead, their defense might have been successful.

Tactically we can find an analogy in the Western Desert of 1942 where for long periods the front was stabilized by armored car screens backed by small tank

forces of mobile infantry and 25-pounder guns termed "Jock" columns. The guns provided sufficient support to enable the armored cars to maintain their positions against moderate opposition. The infantry provided patrols and protection at night. Ground was given freely in the face of heavy opposition but never without inflicting casualties on the plentiful targets which presented themselves.

The strength of the "Jock" column lay in the damaging effect of its 25-pounder shells and the ability of the artillery observation posts (OP's) to protect themselves with their own shellfire and the close protection afforded by mobile antitank guns.

The weakness of these columns lay in the fact that once the OP's were driven in, the entire column had to give ground. Thus they could never be given more than a delaying or harassing role and later became unpopular as the use of artillery in this way was deemed uneconomical. Nevertheless, these columns did provide the means of dominating wide frontages in both attack and defense with a minimum of force and logistical effort. The future equivalent of the "Jock" column can be provided with a hitting power many times greater than its desert predecessor. Its value in attack and defense will be increased to the same extent.

The methods employed by these desert columns and the systems used to supply them are worthy of study: future warfare will be based on much the same principles.

Today, we are groping for a defensive method which can be applied by existing forces. All agree that they must disperse to survive but none can show how, having dispersed, they can remain effective. Dig to live is another cry. But living in dugouts is the very antithesis of mobility, and dispersed localities small enough to avoid the attentions of atomic artillery will have no military value whatsoever. The morale effect on soldiers, however

well dug in, awaiting atomic attack is a factor which has yet to be assessed.

It seems that the defensive answer must lie in a blend of dispersion and concealment which can stem only from complete mobility, coupled with the ability of each small group to depend primarily on atomic firepower to destroy the enemy on their particular portion of the front.

### The Offensive Theory

The reasons have been given why the defensive will be carried out by small well-dispersed forces on a wide front. The unbreakable line must be replaced by a defensive principle of depth based on complete resilience. The attack is governed by the same factors. To concentrate will be suicidal, overdispersion ineffective. Only the devastation caused by an atomic bombardment will provide the link between the two extremes and enable comparatively small forces to achieve results which previously required long weeks of combat by thousands of troops.

Although atomics have swung the pendulum in favor of the attack, we must not suppose that the offensive is going to be easy against an enemy who is similarly equipped and prepared to employ the same principles as have been outlined in the previous paragraphs. Those who followed the German Armies through Italy and France in 1943-44 know the power of a well-handled and hard-hitting rear guard. It is a force which strikes hard and then slips away in time to fight another day. The attack must not be undertaken lightly. In any case, to undertake a ground offensive before the strategic air offensive has achieved a large measure of success would be unsound. It would be wise to begin the advance only when the enemy's ability to wage war has been damaged seriously and his ground and air forces have already begun to feel the effect of our interdiction.

In any condition other than total capitulation some form of offensive advance will

have to be undertaken by the army. Whether this is a gigantic mopping-up operation against a scattered and demoralized army, or a hard battle against organized troops who are determined to sell their lives dearly, will depend on whom we are fighting and how effective has been the air bombardment in their rear.

We shall have at our disposal the same light armored forces supported by infantry and atomic artillery which have been discussed. The technique of attack with these forces will be the advance on a wide front, the pulverization, again on a wide front, of any resistance encountered, and the rapid exploitation by the fighting vehicles, closely supported by their infantry and atomic field artillery. Reserve formations similarly organized will have the task of locating and atomizing any areas which have been bypassed by the forward troops.

### Limitations of the Present

Many factors exist today which must be resolved before we can hope to reorganize our forces on the lines indicated here.

The most important of these is that it is impossible to be revolutionary and evolutionary at the same time. Even if it were to be agreed that we can, in the near future, base our entire organization on the decentralization of atomic weapons, we are still faced with the problem of paying for the development of these weapons and the manufacture of large stocks of atomic missiles while at the same time maintaining our present forces at a high state of readiness during the transitional period. These problems, however, are not insoluble since the introduction of atomic weapons will enable us to make such tremendous reductions in military manpower and equipment that it will, to quote the popular advertisements, "pay for itself in a few years."

At present, atomic missiles are like magic pills which can be dispensed only

by those in very high places. Even when these missiles become smaller and more plentiful there will be many problems to overcome before they can be discharged by low-level formations all along the battlefield. We still know very little about them and are more concerned with the damage we may do to our airmen with the flash, to our soldiers with the blast, or to our reputations if we put one in the wrong place.

The need for coordination with the air force is one of the major factors which prevents the decentralization of control of atomic weapons. However, the requirement for Royal Air Force (RAF) support within 100 miles of the battlefield probably will disappear except for reconnaissance. With improved communications and fewer headquarters there will be no difficulty in ordering short periods of cease-fire when sorties are to be flown, particularly if tactical reconnaissance can be made the responsibility of the army rather than the RAF. It is a logical development of the air OP principle that the army should search out the targets for its own long-range rockets, the success of which may depend on the entire land battle, particularly as this role does not demand a high performance aircraft. It is equally logical that the air force should be left free to concentrate on the strategic air offensive with its equally important long-range reconnaissance commitments.

Another of the problems which beset us at present is the question, "What is an atomic target?" Today, when the missiles are large and scarce and the means of delivery are limited, the answer is, in the normal course of events, something fairly big, say a brigade concentration. The day probably will arrive, however, when half a dozen tanks or a company of infantry holding up our advance or threatening our position will warrant a small atomic shell.

The atom was first split in 1932, only 25 years ago. A dozen years or more ago

no soldier had even heard of an atom bomb or shell. Yet today we have atomic cannon and rockets in operation on the battlefield. Will anyone say that in 30 years or less we will not have atomic field guns, nuclear-powered vehicles, or even a gamma ray gun?

We are, therefore, at a difficult and dangerous stage in the history of warfare. The atomic weapon has resulted in a revolution greater even than that produced by the introduction of gunpowder in the 13th century. The evolution of forces adapted for the proper use of the atomic weapon must, from the very nature of things, be slow. And yet if war were to come tomorrow, we will have no time to develop and exploit our new power.

The recent reorganization of our formations can be regarded as nothing more than a stirring of the conventional ingredients which has produced the same cake with the addition of an atomic cherry for decoration. The numbers of troops, vehicles, and guns get no smaller; indeed, the infantry division is increased by a brigade of tanks and its total strength now will be not far short of 20,000 men.

The infantry division's ability to hold ground in the face of atomic attack already is small since the dispersion necessary for survival cannot be equated with the ability of the individual unit to resist attack. It lacks the firepower, the communications, and the mobility to operate as a strong defensive screen on a wide front. It is, therefore, an unsuitable organization for atomic warfare so long as it has to depend for its offensive and defensive power on a few atomic weapons controlled at a higher level.

The armored division, even when pruned of an infantry brigade, still will have 3,000 vehicles and use 2,000 gallons of gasoline per mile. This great force of vehicles will come to an abrupt halt when faced with a river a dozen feet in width and depth until bridges or rafts capable

of carrying a load of 50-60 tons have been constructed, while the loss of the infantry brigade has seriously reduced its powers of sustained action.

These are the forces then that must keep the balance in Europe until the development of atomic weapons for the army will enable us to carry out the revolution in organization the necessity for which is already 12 years old. It is a solemn thought that it is the Germans who are in the best position to profit from this military revolution. Starting from the beginning with none of the organizational or equipment problems which hamper us, they can, should they so wish, provide for an army based on atomic firepower throughout. It will be interesting to see whether they have appreciated their advantage or whether political considerations will demand a rapid buildup of conventional divisions.

### Logical Logistics

A division in action requires daily administrative support at the rate of not less than 300 tons. Since our air force cannot begin to support a field army as long as tonnages of this amount are required, it all has to come by road or rail. Roads and railways pass through towns and valleys, cross rivers on existing or military bridges, and are marked with fatal clarity on the map. Along these vulnerable arteries flow the hundreds of supply vehicles which, unlike their predecessors the horse, the mule, and the ox, cannot live off the country. Each vehicle adds to the ever-increasing demand for fuel and rations in the battle area.

The four main components of the logistic snowball are POL, ammunition, rations, and vehicle spares. Until these are reduced to a fraction of their present level it is fatuous to demand either a reduction in the administrative "tail" or for an air supply lift. Many have advocated a supply vehicle with a cross-country performance as the answer.

Since such a vehicle will require five times as much fuel as a roadborne vehicle, three times as much maintenance, and will have to use roads through any natural or artificial defile, it has not yet made its appearance.

Now, however, a completely new logistical prospect begins to emerge. The organization which is outlined in the latter part of this article can reduce the ration strength of the fighting troops to one-sixth of their present number per mile of battlefront. The ammunition problem, provided that all artillery missiles are atomic, will be negligible in comparison. The vehicle strengths will be reduced to about one-twentieth of the present numbers and each vehicle will be capable of running at least 200 miles on the contents of its gasoline tank. The vehicles will be largely of a standard pattern and require no heavy spares such as new engines and tracks every few thousand miles.

Since the war will be a short one rations can be cut to a sensible minimum and each subunit will start with 10 days' supply of food. One hundred miles of spare fuel will be carried either on the vehicle or in transport close to the front. All these factors will make it possible for the army of the future to be virtually self-contained for the first 10 vital days after the opening of hostilities and for air supply to become a practical proposition at all levels.

The supply problem will resolve itself into a simple matter of keeping small stocks of POL, ammunition, and rations in dispersed dumps well in rear of the forward troops and moving them forward by road or helicopter into supply points within reach of the fighting troops. The helicopter for a long time to come will be too uneconomical to replace entirely the truck as a supply vehicle. As a temporary substitute in an emergency, however, it will impart a high degree of flexibility to the supply system. It will also be available for the variety of other roles which are

already evident, namely assault crossings of obstacles, intercommunication, and casualty evacuation. The maintenance of the supply of vital atomic shells could well become entirely dependent on air transport from factory to fighting troops.

Here, then, is the answer to the quartermaster's prayer—a flexible forward supply chain, able to operate by road or air to carry forward the much reduced requirements of the fighting troops. Added to this is the increased ability of the forward troops to survive for a reasonable period even when their direct supply line is cut, thus giving that invaluable margin of time in which to reestablish the administrative communications by either air or road.

The problem of POL supply will remain with us for a long time, even after the elimination of the heavy tank, as a reminder of our old methods of waging war. The advent of nuclear-powered engines, however, may one day solve even this problem.

#### Summary

Tactically this has been a big meal to digest. Since it will be pointless to go further until the many fundamental changes in the present principles of tactical warfare have been accepted—or at any rate partially accepted—it will be as well to summarize briefly at this stage.

Ten years ago land warfare was waged by massive armies whose striking power depended on large quantities of tanks, infantry, and artillery supported in the air by great numbers of aircraft. Good infantry, well-concentrated and adequately supported, was the backbone of the defense. In the attack it provided the bayonets which were the only conclusive argument in the battle since the effect of artillery bombardment, however massive, was never totally destructive.

Atomic weapons already are available

on the battlefield. In a short time they can be in sufficient quantity and at such a stage of development that they can be used to destroy either a small center of resistance or a great city. The tremendous cost of their development will be offset in a few years by the saving in manpower and conventional materials which they will make possible.

The effect on the military situation is far-reaching and fundamental. We shall be forced to reduce the scale of our present-day armies. Concentration of troops at the vital point in attack or defense no longer will be a feasible proposition, and in consequence our present tactical methods will change completely. Since the strategic air offensive will force an early decision, the army can afford to rely on a higher degree of logistical self-sufficiency which can be given permanency and flexibility by an air and road supply system no longer burdened by the huge demands of the past.

The disappearance of the heavy tank from the battlefield will enable us to create the really light, mobile, and hard-hitting forces which the atomic era will demand. In the last war we were dominated in thought and on the battlefield by the tank which influenced every phase of battle with its protective armor and vicious gun. At present, we are seeking to couple the armored mobility of the tank with the offensive potential of the few atomic weapons at our disposal. It is, however, a passing phase for as atomic weapon development increases so the mobility and invulnerability of the tank will decrease, until the atomic gun alone is left as the dominant weapon on the battlefield.

It is only against this background of tactical domination by the atomic missile that the task of designing an organization for a nuclear warfare army can be undertaken.

# THE GETTYSBURG BATTLE

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**I**N A six-month period General Robert E. Lee and the Confederate Army of Northern Virginia had won two smashing victories — Fredericksburg (December 1862) and Chancellorsville (May 1863). Chancellorsville probably was Lee's most brilliant victory for there he defeated a Yankee force two and one-half times his own strength. But it proved to be a dearly purchased victory for it took the life of General Thomas J. (Stonewall) Jackson, Lee's II Corps commander, his most trusted and aggressive field leader, and one whose presence at Gettysburg, it has been said, might well have turned the tide into a decisive Confederate victory.

The Battle of Gettysburg was the greatest battle ever fought on American soil and one of the greatest battles of all time in its own right. In three days there were over 50,000 casualties—killed, wounded, or captured, more than one-third of the United States casualties in the three years of Korean fighting; approximately 23,000 on the Union side, or one-fourth of the Union force, and 25,000 to 28,000 Confederates, almost a third of the Confederate force. It is a classic example of a meeting engagement, a collision of opposing forces with neither side fully deployed and prepared for battle.

## Organization of Forces

A review of the organization of the two armies and of the leaders on both sides shows a Confederate force of three infan-

try corps and one cavalry division opposing a Union force of seven infantry corps and one cavalry corps; approximately 76,000 Confederates against approximately 90,000 Union troops. Confederate corps were approximately twice the strength of Union corps since the Confederate divisions contained 10,000 to 18,000 troops as opposed to the Union divisions of 5,000 to 9,000.

The location of the forces and their commanders at the outset of the Gettysburg Campaign is shown on Figure 1.

The Confederate I Corps was commanded by General James Longstreet, the II Corps by General Richard S. Ewell, Jackson's replacement, the III Corps by General Ambrose P. Hill, and the cavalry division by General J. E. B. (Jeb) Stuart. On the Union side, General Joseph E. Hooker was in command as General Lee started north, but in a petulant mood he asked to be relieved when denied the Harpers Ferry garrison as reinforcements for his field army and, as a result, he lost his command to General George G. Meade just three days before the battle. The Union corps commanders were: I Corps, General John Reynolds, who was succeeded by General John Newton on Reynolds' death; the II, General Winfield Scott Hancock; the III, General Daniel E. Sickles; the V, General Meade, succeeded by General George Sykes upon Meade's assumption of army command; the VI, General John Sedgwick; the XI, General Oliver

*A study of the Battle of Gettysburg—one of the greatest land battles ever fought on American soil, and one of the greatest battles in its own right—reveals many lessons of value to today's military leaders*

O. Howard; and the XII, General Henry W. Slocum. General Alfred Pleasonton commanded the cavalry corps, and the Union cavalry division commanders were Brigadier Generals John Buford, David Gregg, and General Hugh H. Kilpatrick.

Before going into the events leading up to the battle, it is well to become oriented with the terrain over which the two armies marched and maneuvered to meet finally at Gettysburg.

Figure 2 indicates the routes and terrain used by the opposing forces.

From the South's viewpoint, June 1863 appeared to be a good time to take the war to the North. Southern morale was high; Lee's ranks had been refilled and the Army reequipped since Chancellorsville; the Union Army was measured for the kill and a successful invasion of the North might mean recognition and war loans from England and France and the means to shake the strangling blockade of the Confederate's ports. It might even turn the North's whispers for peace into a resounding roar.

The North's morale was low. The losses at Fredericksburg and Chancellorsville had produced staggering casualty lists, Federal taxes were mounting, conscription

was unpopular to the point that in many places the draft was meeting the resistance of armed mobs, and an antiwar sentiment was growing fast in the North.

### Lee Moves

On 3 June Lee left A. P. Hill's corps as a covering force at Fredericksburg (Figure 1) and quietly began slipping the remainder westward toward Culpeper for an advance up the Shenandoah and Cumberland Valley, where the Blue Ridge and South Mountains would screen his move.

General Hooker had the Union Army concentrated south of Manassas Junction, with detachments at Harpers Ferry and Winchester, but suspecting Lee was up to something he pushed his cavalry to Brandy Station to make a reconnaissance in force. Here, on 9 June the Blue cavalry jumped Stuart's troops recovering from two successive grand reviews and celebrations. It was practically the first real taste of success the Blue cavalry had ever enjoyed and it did much to bolster their morale. They finally were beaten off, after a furious fight which lasted from early morning to midafternoon, but obtained enough information to confirm Hooker's suspicion that Lee was planning a major move, although Hooker was not clear as to Lee's objective or line of march.

The first tangible evidence of Lee's intentions came on 14 June when General Ewell's corps leading the Confederate march slammed into Winchester and captured half of Major General Robert H. Milroy's Union force before he could withdraw to Harpers Ferry, as he had been directed. Lee now picked up speed. By 17 June Ewell had crossed the Potomac and was heading into Hagerstown with his cavalry approaching Chambersburg. Behind Ewell's corps tramped the men of Longstreet and A. P. Hill.

In the meantime General Hooker had completed the concentration of his Army

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near Manassas Junction, and as soon as he learned of the Confederate crossing of the Potomac, he wheeled northward toward Harpers Ferry to be in a position to threaten Lee's flank and to protect Washington and Baltimore. The Blue cavalry protecting the Union left flank was so effective that General Lee had no definite knowledge of the whereabouts of the Union Army, so he assumed it still was back at Manassas Junction. By 24 June, however, the Union Army was well on its northward march, with its leading elements already north of the Potomac.

Lee, at this time, ordered Stuart to cross the Potomac, east of the mountains, make contact with the Union Army if it crossed northward, and do the Union as much damage as possible. Then he was to close up on Ewell and keep in touch with him. Nothing was said about keeping General Lee informed and this proved most unwise, for General Lee lost touch with Stuart's cavalry from 28 June, when Stuart started eastward, until 1 July, when a message reached Stuart at Carlisle ordering him back to the Gettysburg fight.

#### Meade Deploys Union Troops

On 28 June the Union Army was in the vicinity of Frederick, Maryland, under its new commander, General Meade. Ewell's corps, in the van of General Lee's Army, was well on its way to the objective of Harrisburg. The corps was deployed with two divisions in the Carlisle area and General Jubal A. Early's division, having passed eastward through Gettysburg, in York. The leading brigade of Early's division was at Wrightsville on the Susquehanna, with instructions to cross at that point and close on Harrisburg from the east.

Stuart had started after the Union Army but its strength and route of march prevented him from interposing his cavalry between it and Ewell's forces as directed. Stuart then swung east, crossing

the Potomac at Rowser's Ford west of Rockville and headed for Westminster and Hanover with the idea of joining Ewell by cutting in ahead of the Union Army.

Lee still was under the impression that the Union forces were south of the Potomac and, therefore, when on the night of 28 June he received word from a Confederate spy that the Union Army was at Frederick converging on the passes of South Mountain, and on Harpers Ferry, he feared for his line of communications. Orders were dispatched immediately to all Confederate commanders to concentrate in the Cashtown-Gettysburg area, Lee's plans being to threaten Baltimore and draw Meade away from the Confederate line of communications west of the mountains.

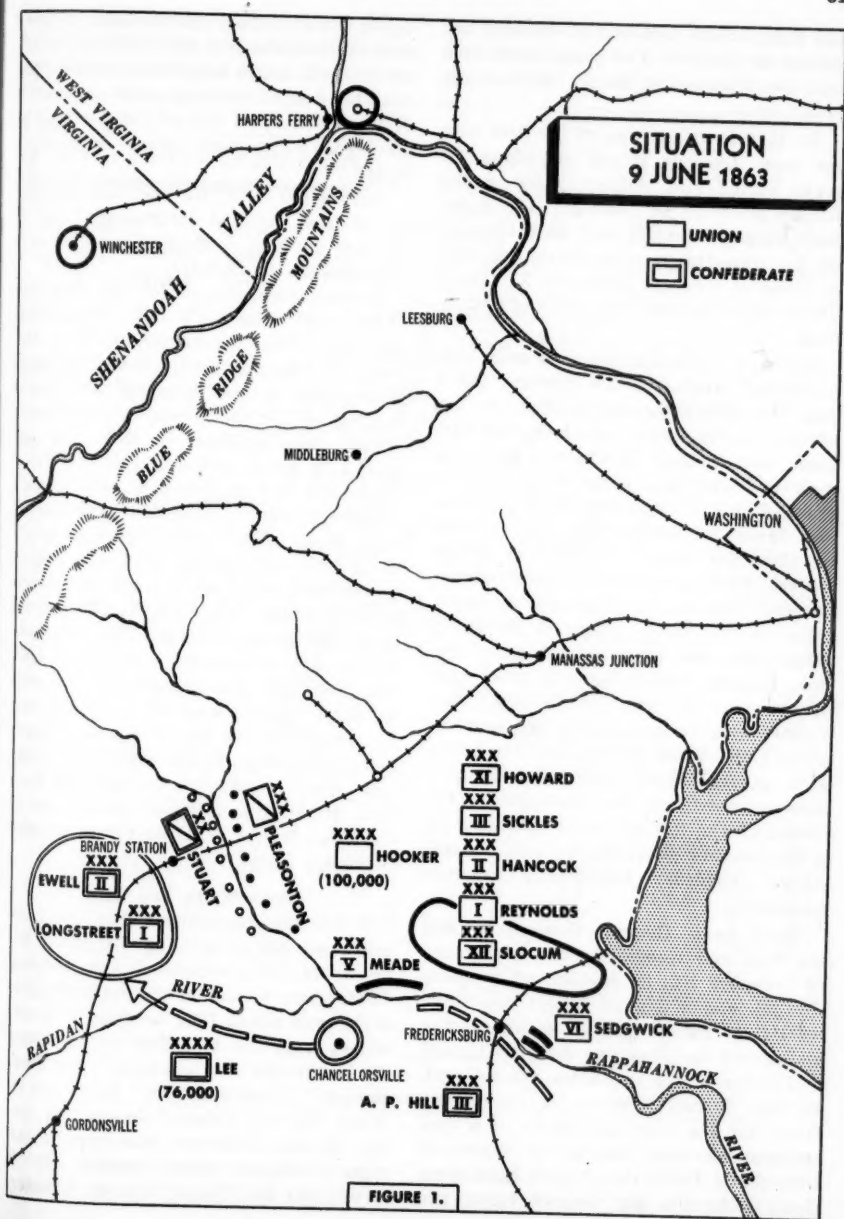
Meade, however, on assuming command, abandoned Hooker's plans to strike Lee's line of communications, and on 29 June hurried his Army northward from Frederick planning to take up a defensive position near Taneytown along Pipe Creek and to force a battle with Lee to draw him off from Harrisburg and the Susquehanna River.

On 30 June Buford's cavalry division screening Meade's Army rode into Gettysburg from the east. He immediately threw out patrols to the north and the west, contacted Reynolds' corps, the nearest Union infantry, and realizing the importance of Gettysburg with its network of roads decided that it would be a good place to hold.

Here at the little town of Gettysburg on 1 July, in the cool quiet hours of a summer morning, Buford's division of some 3,000 men deployed along McPherson Ridge awaited the leading division of A. P. Hill's Confederate III Corps approaching from Chambersburg.

#### First Engagement

At 0800 on 1 July, Hill's leading division under General Henry Heth drove in Buford's patrols who fell back on McPherson's line.



son Ridge. Heth deployed his division but gained no ground. The word went back and the balance of A. P. Hill's corps moved up.

By 1000 Reynolds was on the field with his three divisions strung out along the roads behind him. Analyzing the strong terrain positions of Cemetery and Seminary Ridges, Reynolds sent word to bring up his own troops immediately, as well as those of General Howard's XI Corps. These orders initiated the Battle of Gettysburg.

Buford's troops, although heavily outnumbered, stopped Hill's advance for a good two hours, largely through the use of their newly issued breech-loading carbines. Just as their ammunition was running low and they were being heavily crowded by Hill's infantry, Brigadier General James S. Wadsworth's division leading Reynolds' corps, followed by Major General John C. Robinson's and Brigadier General Thomas A. Rowley's divisions, came up the reverse slope of Seminary Ridge and took over the center of the line. Buford shifted his exhausted cavalrymen over to the Carlisle Road. For a time, after furious attacks and counterattacks, the Union I Corps had the better of it and the battle dwindled away to a long-range artillery duel. Reynolds, at the height of the fighting, was cut down by a Confederate sharpshooter and General Abner Doubleday temporarily assumed command.

About noon, General Howard reached the field, and recognizing the importance of Cemetery Hill he dropped off one division (Brigadier General Adolph von Steinwehr's) to hold it and act as his reserve and moved the other two divisions toward McPherson Ridge to bolster the I Corps. He was forced, however, to change his front, for the roar and smoke of a new engagement was boiling up north of Gettysburg. Down the Carlisle Road came General Ewell's big veteran corps and

again it was Buford and the battered cavalry division who took the brunt of the initial assault. Again he gained precious time with his dogged delaying action, to permit Howard to form a line at right angles to Doubleday's position along McPherson Ridge.

Buford fell back. He had used up half his division but had accomplished one of the best day's work of any Civil War cavalry division commander.

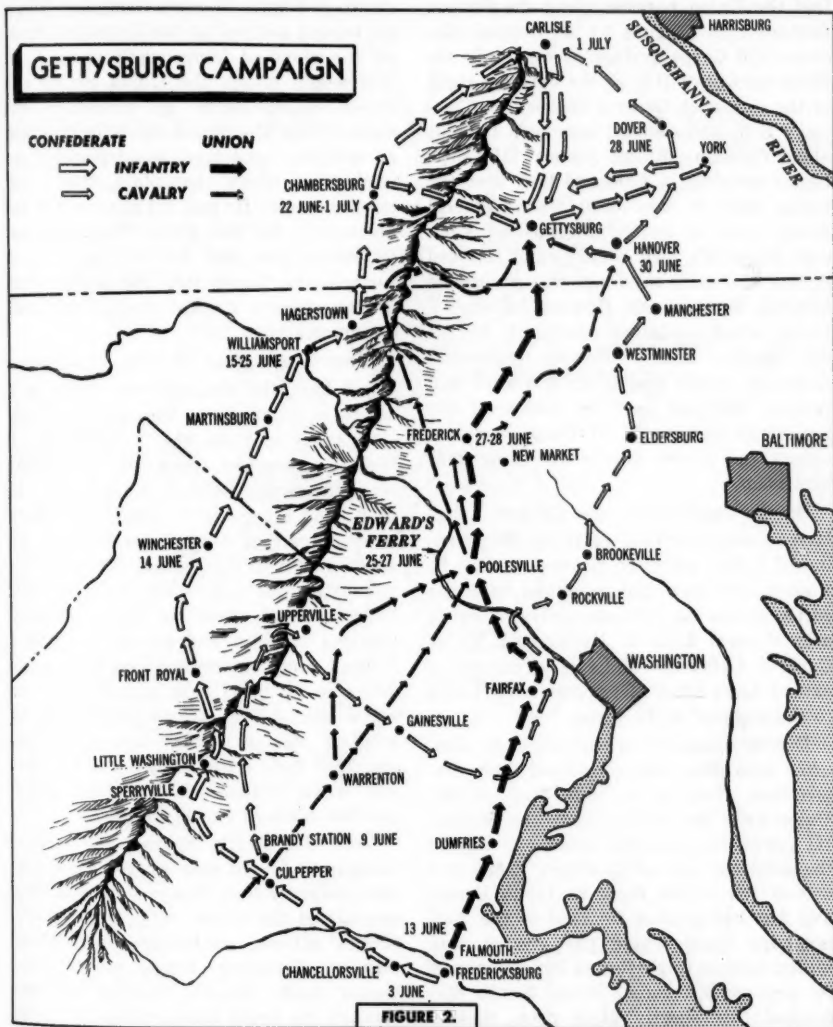
It was touch and go for the next few hours with Howard's XI Corps—still smarting from the thrashing they had taken at Chancellorsville from this same corps then under Stonewall Jackson—holding off the Confederates. Ewell positioned some artillery on Oak Hill and opened up along both flanks of the Union lines; and just at this time Jube Early's "walking" cavalry came down the Harrisburg Road. They lashed into Howard's right flank causing the XI Corps to give ground and fall back through the streets of Gettysburg. Before the XI Corps could be halted along Cemetery Hill and reinforced with Steinwehr's division, 4,000 men were lost. Doubleday's I Corps with its flank exposed also fell back and took up position to the left of Howard's corps along Cemetery Ridge, while the Gray tide rolled relentlessly through the town of Gettysburg and lapped at the foot of Cemetery Hill. A. P. Hill's forces occupied Seminary Ridge.

#### Ewell Waits Too Long

It has been conjectured that had Ewell continued his assault up Cemetery Hill he would have completed the smashing Confederate victory of the first day. However, from about 1630 he delayed despite orders from Lee to follow up the attack "if he thought it practicable." But Ewell thought "it impracticable." He waited for Major General Edward Johnson to come up; he was concerned over reports that more Yankees were coming up to strengthen the Union lines on Cemetery

Ridge. By the time General Lee joined him at 1900, only one hour of daylight remained. Lee did not order Ewell to at-

not take the bait, and up on Cemetery Hill the Blue lines were growing stronger and stronger, as breastworks took shape, po-



tack but pointed out in his gentle way that the longer they delayed the stronger would be the Union position. Ewell did

sitions were improved, and units were re-assembled.

General Hancock was in command now.

Upon hearing of Reynolds' death, General Meade sent General Hancock forward to take command, and it was he who organized the Union position along the famous fishhook line. (Figure 3.) As General Slocum's XII Corps arrived, it went into position on Culp's Hill at the extreme right of the line, with General Howard on Cemetery Hill, and General Newton's I Corps along Cemetery Ridge. Sickles' III Corps began arriving at 1900 and took over the Union left. It was 0300 when General Meade rode in and took command. General Hancock's own corps, which arrived during the early morning, was positioned between Newton and Howard. Sykes' V Corps, which contained practically all the old regular Army infantry regiments, closed in shortly thereafter and went into reserve positions near the center of the line. Only Sedgwick's VI Corps now was absent, but it was due to arrive by mid-afternoon.

On the Confederate side, General Longstreet's corps arrived early in the morning of 2 July although General George E. Pickett's division had remained with the corps trains at Chambersburg, leaving only General John B. Hood's and Major General Lafayette McLaws' divisions to extend Lee's lines along Seminary Ridge to the right of Hill's corps.

Figure 3 depicts the battlelines at 1530, after both sides had completed their dispositions. Note at the left flank of the Union lines the salient formed by Sickles' III Corps. He had been ordered to occupy the southern part of Cemetery Ridge and extend the Union flank to Little Round Top but had pushed forward to the Emmitsburg Road where the ground was higher leaving Little Round Top unmanned by any combat force. When Meade discovered this shortly after noon, Sickles offered to pull back; General Meade realized it was too late, however, since the Confederate activity indicated an attack was under way.

### Lee's Attack Plan

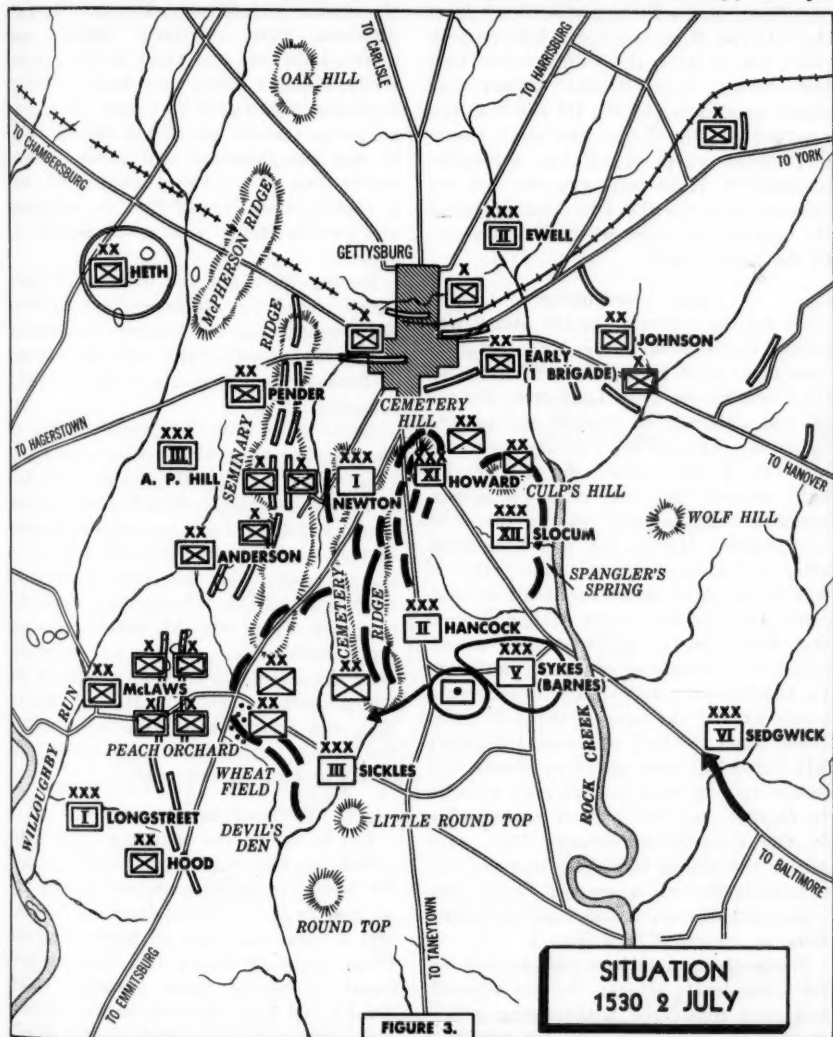
Lee's attack plan was simple enough. Longstreet would move his corps (as shown in Figure 3) down Seminary Ridge, get beyond and roll up the Union left flank. At the sound of Longstreet's guns, A. P. Hill would attack the Union center and Ewell would storm up Cemetery and Culp's Hills. The attack was to be launched as early as Longstreet could possibly get ready; Lee made that plain. But Longstreet brooded. He had not approved of the invasion in the first place. He pointed out to General Lee that the best plan was to encircle the Union left and strike them in the rear to disrupt their trains and communications.

When Lee vetoed the plan, Longstreet urged that the Confederates take up a defensive position, as they had at Fredericksburg, and let the Yankees attack them. Lee, however, stood firm. "The enemy is right there, General Longstreet," he said, "and I'm going to strike him." Even then Longstreet delayed for Pickett's division had not yet joined. When all his remonstrations and delays were in vain, Longstreet set about his task, consuming precious time in endeavoring to find a covered route to the flank so as to avoid detection by the Union signal station on Little Round Top. It was 1500 before his artillery was in position and opened up, and 1600 before the infantry of McLaws and Hood jumped off—an attack which Lee had planned for daybreak.

Once the attack started, the men of Longstreet fought with all the determination and vigor they always employed. They overlapped the Union left, and drove in Sickles' salient; one brigade drove all the way to Cemetery Ridge before being hurled back. Hood's division smashed through the brush and boulders of Devil's Den rolling up Sickles' lines in confusion; but there they were stopped. The Union V Corps under Sykes now was deployed, stiffened by its tiny regiments of grizzled reg-

ulars, hardened by years of Indian fighting. This was their kind of war, hand to hand, no quarter asked, and none given.

was the key to the entire Union line which it dominated, for Big Round Top was too heavily timbered for artillery; and yet



At the extreme right a regiment of Hood's division stormed up the draw between the Round Tops. Little Round Top

when Sickles had advanced his line, Little Round Top was left unmanned. By a stroke of luck General Gouverneur Warren, the

Army Engineer, was on Little Round Top when the attack opened. On his own responsibility he ordered up two brigades of infantry and a battery of artillery from the V Corps. It was an uphill fight on both sides, but at dark the Union forces held both Round Tops. Sickles' salient was slowly ground in, but the III and V Corps reestablished the Union line along Cemetery Ridge where Meade had originally intended it. Hood was wounded but his division held Devil's Den and anchored the Confederate right where it stayed until the battle's end.

### Faulty Coordination

On the Confederate line the attack was poorly coordinated. Only Hill seems to have done what he had been told. He hit the Union center when Longstreet jumped off and although he reached and pierced the center, Hancock's counterattacks threw him out. Ewell's attack did not get off until around 1800 and although it was savagely launched and reached the crest of Cemetery Hill it too was beaten off after a furious fight. At Culp's Hill it was almost dark before Johnson's division could get into the rough ground around that flank. In the darkness both attack and counterattack went astray although the Confederates did capture the entrenchments around the base of the hill, abandoned when the bulk of General Slocum's XII Corps had been moved by Meade over to the left to meet Longstreet's attacks. In fact, it was this lack of coordination in the Confederate attacks that gave Meade the ability to shuttle reserves and reinforcements all along the Union line.

At darkness on 2 July the battlelines were as indicated in Figure 4.

While Meade had been able to beat off the Confederate attacks, he was worried, and even considered withdrawing southward to the Pipe Creek line. He submitted this plan and others to a council of war that night, but his corps commanders voted to stay and fight.

Actually, the odds were building up in Meade's favor. Buford's badly battered cavalry division was in the rear guarding the trains, but Kilpatrick's and Gregg's divisions were relatively intact, and guarded the left and right flanks respectively. Meade's forces now were complete, including Sedgwick's VI Corps which was posted in reserve behind the Round Tops. It had completed a continuous 34-mile march and was utterly exhausted, but a night's sleep would find it refreshed and provide Meade with a substantial reserve.

During the night the balance of Lee's Army closed up—General Pickett's division, which was to acquire immortality during tomorrow's fight, and the balance of Stuart's long absent and tired cavalry brigades.

Early on 3 July Longstreet talked to General Lee about the results of the previous day's fighting. He again urged Lee to take the Confederate Army around the Union left flank. But Lee would have none of that. He was already making plans to attack again, but this time everything must be coordinated. Longstreet would hit Cemetery Ridge with his entire corps using Pickett's fresh division as the spearhead, Ewell would move again against the Union right on Cemetery Hill and Culp's Hill, and Stuart would ride wide around the Union right flank and attack the trains and the Union rear.

### Ewell's Premature Attack

But early on the morning of 3 July, before Lee's planned attack could get under way, the Union artillery opened fire on Ewell's units around Culp's Hill. General Slocum was back in position on the Union right at Culp's Hill, and he proposed to retake those trenches which Ewell's left flank division, under Johnson, had occupied the preceding evening. Ewell did not bother to wait for Longstreet this time or for Slocum either, but launched Johnson's infantry up Culp's Hill sup-

ported by three brigades of Early's and Major General Robert E. Rhodes' divisions. The bulk of the Confederate artillery was

determined effort, but it broke down against the steep slopes and superior numbers; and when Slocum counterat-

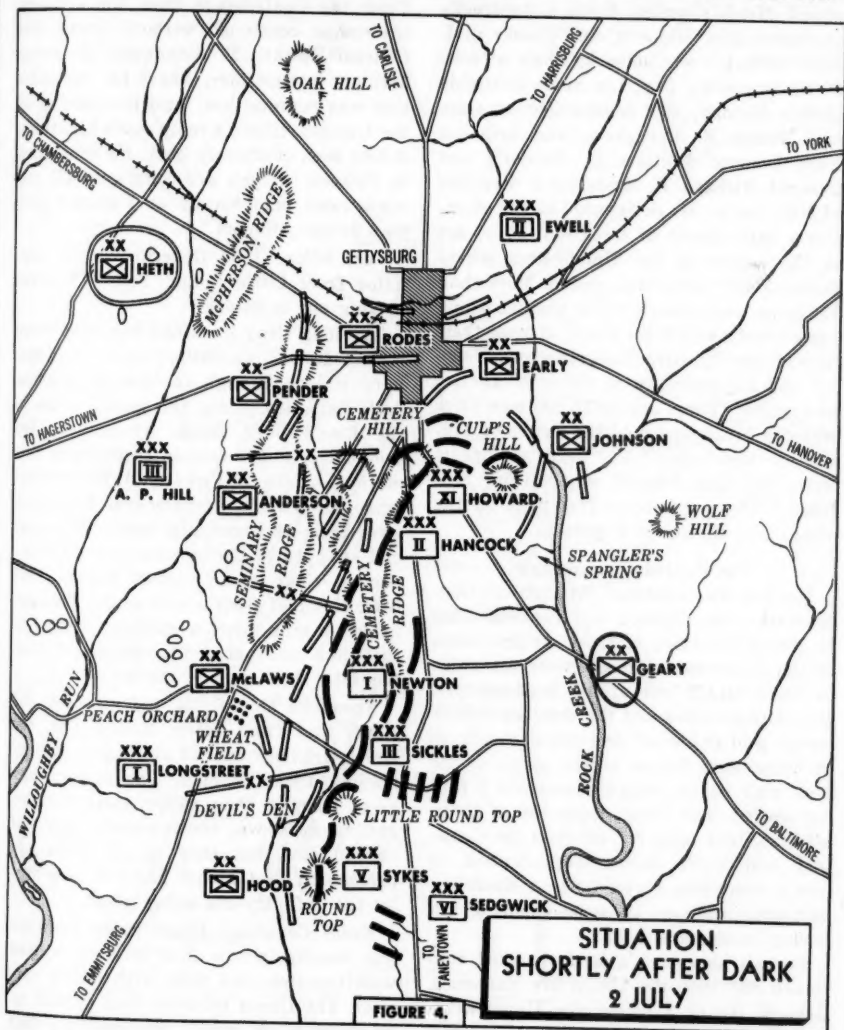


FIGURE 4.

unable to support the assault because of the heavy woods and steep slopes, so the Gray infantry went in alone. It was a

tacked the Confederates were forced back to their 1 July positions. By 1100 Ewell's corps was through for the day.

Lee heard the news of Ewell's repulse in silence. He knew that one-third of his plan had failed, but he was still resolved to attack Meade's center. Upon Longstreet's argument that McLaws' and Hood's divisions were too weakened by their attacks of the preceding day, Lee made available Heth's division, now commanded by General James B. Pettigrew, and brigades from General William D. Pender's and General Richard H. Anderson's divisions of Hill's corps. He designated as the objective a little clump of trees that stood out in the center of the Union lines where Hancock's II Corps was posted. More than 150 guns were wheeled into position along Longstreet's and Hill's front, to mass their fires on the objective. Longstreet was fearful and apprehensive to the last. To Lee he argued, "There are no 15,000 men alive who can break and hold the center of that line up there today." His words to Pickett were, "My God, Pickett, we are being crucified." The dispositions just prior to the attack are shown on Figure 5.

#### The Confederate Assault

But Lee was adamant. At 1300 the Confederate guns opened up, concentrating on that little clump of trees. At first some of the shot went high and over the ridge to drive Meade out of his headquarters. But they adjusted and the trees shed their leaves and branches and stood gaunt as in midwinter. Stones boiled up from the rock wall behind which Hancock's infantry waited. The Union guns—80 of them, all there was room for between the Cemetery and Little Round Top—replied. It was a tumultuous exchange that shook the battlefield and sent up dense clouds of billowing smoke and dust.

For an hour and a half the duel continued and then the Union fire slackened. General Henry J. Hunt, the Union artillery commander, had ordered a partial cessation to let the guns cool, replace broken carriages, and to conserve ammunition. Not many Union guns had been

knocked out, except at the center of the line, and for these fresh batteries were ordered up from behind Cemetery Ridge. From the Confederate lines, the artillery cannonade continued without break, but General Edward P. Alexander, the corps artillery commander, knew his ammunition was running low. And the waning of the Union artillery's reply made him think it had been effectively hurt. He sent word to Pickett, "If you are coming at all you must come immediately or I cannot give you proper support."

Just before 1500 General Warren signaled from Little Round Top, "They are moving out to attack."

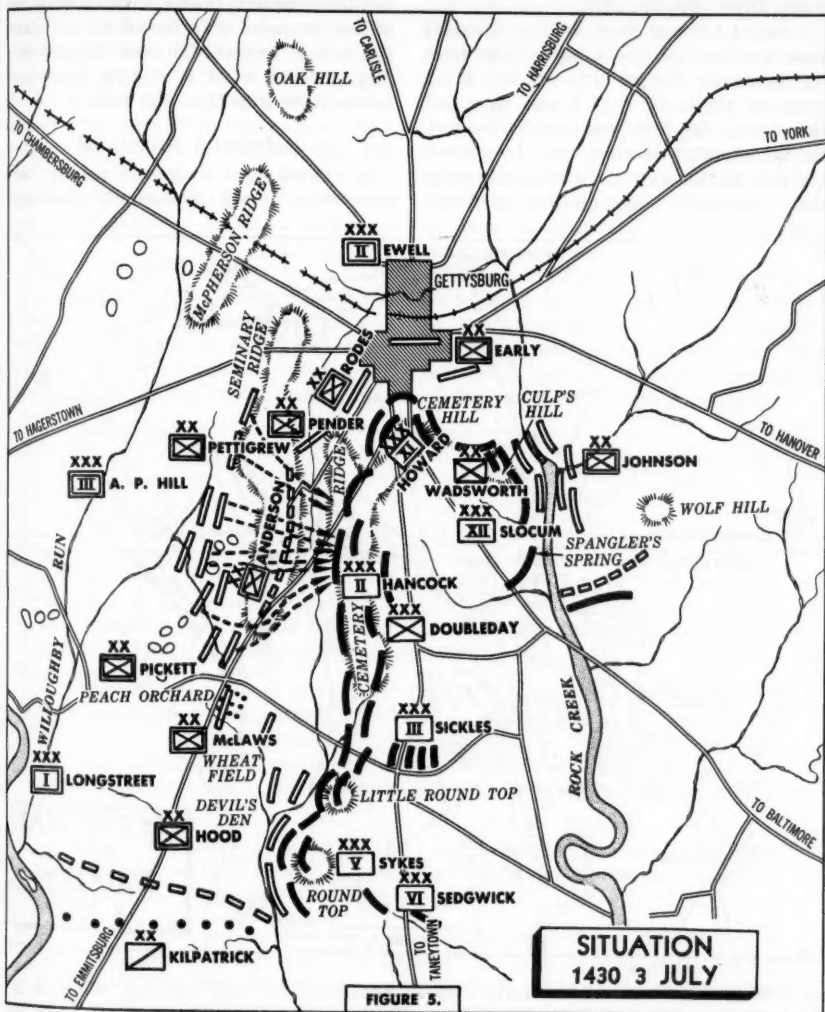
The long Gray lines had begun to move out from the concealing trees on Seminary Ridge, through the line of Alexander's batteries, down the gentle slope to the Emmitsburg Road. At parade step they came, 15,000 men in three dense formations—General Pickett, Major General Isaac R. Trimble, and General Pettigrew. Over them 42 regimental battle flags rose and snapped in the summer wind as they started their death march toward that little clump of trees a mile across the open fields. A mile away a stubborn Blue line that had weathered the deluge of Confederate shell grimly waited.

From the Union left and all along the ridge, and from Little Round Top, the Union artillery opened at long range, enfilading Pickett's men. The gunfire tore great holes in their ranks, their flags began to go down, their parade step was ragged now, but they closed ranks and pressed on. Not a shot had yet been fired by the infantry on either side.

From Cemetery Ridge every available gun was firing now, first with grape, then with canister, and then with double canister. The Union infantry then opened up. The clouds of smoke obscured the field from the watchers on Seminary Ridge. The parade was over now. At 100 yards Pickett's men delivered a volley of musket

fire, and charged the low stone fence and the infantrymen crouching behind.

Lewis A. Armistead kept pouring forward. They went over the wall with Armistead



Both Pickett's flanks were exposed. Union infantry vaulted the fence and closed in on either side. The center of the Confederate line led by Brigadier General

still in the van. About 100 yards beyond the wall Armistead went down.

Hancock's reserves now closed in. The Confederate charge was broken. In re-

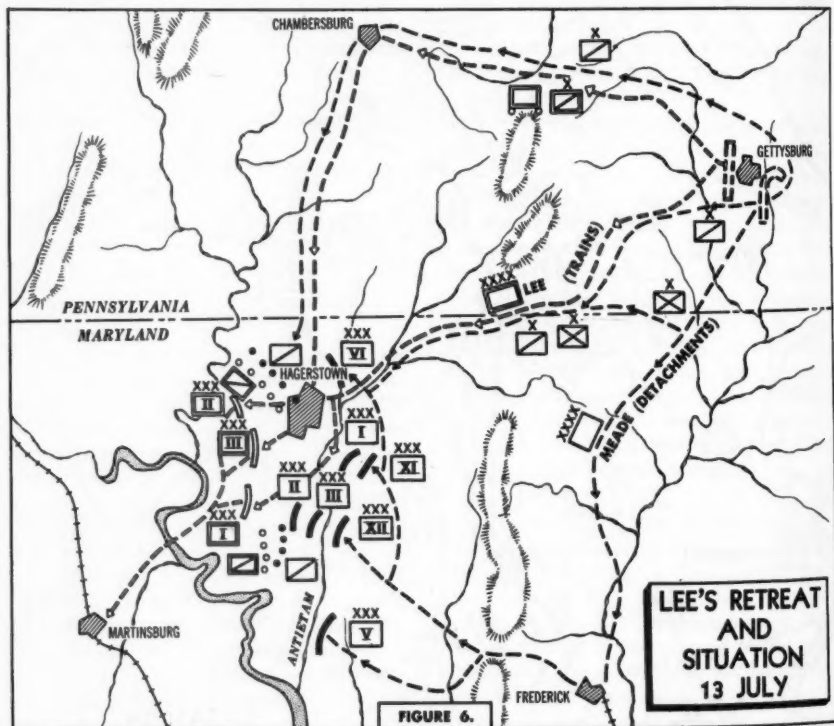
treat the Confederates ebbed back across the bloody fields with Union cannon pursuing them unmercifully.

General Lee met them as they stumbled past him toward the safety of the trees on Seminary Ridge. "It's all my fault, men, all my fault. It is I who have lost this fight." The task was to rally the men for the expected counterattack. Longstreet recalled Hood's and McLaws' divisions to their original 2 July position on Semi-

had grabbed for wagons, supplies, and ammunition that cluttered up Meade's rear, but his men were numb with fatigue, one of his brigades was forced to withdraw for lack of ammunition, and Gregg's cavalry division, after a roaring three-hour battle drove him from the field.

#### Confederate Withdrawal

It rained on 4 July and activity was restricted largely to casualty collection,



nary Ridge, and managed to form a line from the remnants of Pickett's division. But no attack came. General Meade was content with his defensive victory.

General Stuart also was in for rough treatment around in the Union rear. He

consolidation, and waiting. When it became apparent to Lee that Meade did not intend to attack him, he ordered a withdrawal. During that night and the morning of the 5th, the Confederate Army fell back (Figure 6) along the Chambersburg

Pike and the Hagerstown Road. Meade followed, the bulk of his Army going south to Frederick, but except for some rear guard action and cavalry raids, Lee was able to retire to the Potomac which he crossed on the night of 13 July and the morning of the 14th. Only Hill's corps was seriously pressed in the crossing. This was due principally to the fact that the cavalry rear guard mistakenly crossed ahead of his last division, which was set upon by Kilpatrick's Union cavalry.

### Conclusion

Lee's invasion of the North was ended. It had been a bold stroke and nearly successful. Commanders of both sides came in for praise and criticism—criticism for Ewell's delays; Longstreet's vacillations

and resistance to Lee's plans; Lee's unsuccessful assault; Sickles' exposed position on the left of Meade's line; and Meade's failure to counterattack and destroy Lee after Pickett's attack. Praise too was theirs—for Buford and Reynolds' first day's stand; for Hancock's masterly deployment of the Union forces and his defense of the Union center; Meade's leadership and victory; and Lee for his wise strategy, although it went awry, and his magnificent control of the Army during its withdrawal.

Among the 3,000 battle monuments at Gettysburg, is the only one ever erected to commemorate an address—Lincoln's Gettysburg Address of 19 November 1863 decreed by history as the fitting epilogue to this continent's greatest battle.

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The Army's job is to fight on land, but this does not mean we are earth-bound. The Civil War Army moved at the speed of a horse, the World War I Army moved at the speed of a slow truck, the World War II Army moved at the speed of a fast truck (55 miles an hour). This is the air age; now we have an air-minded Army. What we want now is an Army we can move by air—around the world, and around the battlefield.

We want to be able to move divisions by air to any distant small war. We have no desire to run a fleet of strategic air transports; we look to Air Force, Navy, or even commercial aviation to provide the airlift. When the means to do this become available, the value of our General Reserve will multiply and our deterrence of Communist grabs at weak nations will be greatly increased.

On the battlefield we need airplanes and helicopters for observation, for command, for shifting troops, for frontline supply, for moving out wounded. These vehicles we do operate ourselves.

We want also *new weapons and equipment* designed to cope with the battlefield problems of atomic war: the necessity to disperse into small combat groups, yet give them the power to communicate, to act in unison, to move with great speed, to strike with great power.

General Williston B. Palmer

# Development and Application Of Joint Capabilities

Colonel Harold E. Nelson, *General Staff*  
Headquarters Third United States Army

ON 26 November 1956, Charles E. Wilson, then Secretary of Defense, reminded the Armed Forces of the United States that they are part of a joint team when he delineated specific fields of responsibility among the services. Whether or not all the services agreed with the decision is less important than the fact that a decision was made.

Although each of the services has presented what it honestly feels to be its role in joint as well as uniservice operations, the fact that these uniservice viewpoints conflict is the natural result of years of research and development into the best tactics and strategy to be applied in particular fields of warfare. There has been little formal development and research into the joint use of the separate systems. Uniservice viewpoints on joint roles naturally fall into categories influenced by the experience, background, and interests of the service of the author.

The problem that faces the Joint Chiefs of Staff (JCS) and the Department of Defense in reaching a decision must be tremendous when one pictures advisors from various services trying to maintain an unbiased attitude, thrown together with hardheaded businessmen who are experts in the financial and political implications of the matter being considered—all try-

ing to arrive at a recommendation on a matter for which there is little policy, doctrine, or precedent.

To provide a source for background information upon which logical decisions can be made on joint matters, our country must establish a system for developing joint doctrine and procedures. Once developed the information must be subject to constant study to meet the rapid changes in weapons systems and political requirements. Such a source would be invaluable to the JCS and would supplement other agencies in providing guidance in the development of weapons and forces as well as in the preparation of plans for coping with future emergencies.

## Existing Agencies

Some agencies already exist that could play a major role in this field, namely the three joint colleges of the Armed Forces. Certainly, there is no other place where joint problems are aired in a more challenging and academic atmosphere than at these institutions.

There are, however, additional measures that could be taken to assist in solving this problem. Many service misunderstandings are the result of lack of experience and understanding of the capabilities of the other services. This results from

*New weapons and organizations require that our country establish a system for developing joint doctrine and procedures during times of peace to ensure effective usage in coping with any future emergencies*

the fact that most officers spend 15 to 20 years in their respective branch of the Armed Forces before they share the experiences of the other services, and then it is limited to a joint service school or high-level joint staff position at a time when the officer is more or less set in his viewpoint.

To correct this situation, early and continuous training in joint forces and their application is required. The cadet should be taught the role of his branch as a part of the over-all team and as a member of a joint team in actual operations. To a limited extent West Point cadets and Annapolis midshipmen receive an orientation in the annual CAMID exercises (a combined maneuver in collaboration with Annapolis midshipmen). It is hoped that the Air Force Academy can join in this operation. This, however, is only a small part of the indoctrination needed.

The application of joint operations to small field units is an area that is relatively undeveloped. The employment of joint forces is confused by the variety of viewpoints as to which service will provide the subordinate task force commanders and the extent of control the commander will exercise over certain components. The staffs on some task forces are called joint although the representation of other serv-

ices on the staff might be nothing more than liaison officers or advisors.

Cooperation versus command is another troublesome problem preventing full development and understanding of joint capabilities. Some services insist on full command authority within their service but do not recognize the same requirement in joint operations. Although cooperation has been successful to some extent on high-level joint staffs, it is a poor substitute for command of small units in joint wartime operations.

### Establish Joint Forces

Although existing joint staffs at high levels are effective in spite of lack of experience and prescribed doctrine, the advent of new weapons and the possibility of simultaneous operations in different parts of the world will pose new problems for the future joint staff officer.

To provide a vehicle for developing doctrine and providing joint forces capable of coping with future problems, there is a need now for a joint force, at the task force level, where the young service officer can gain experience and where the future senior staff officer and commander can face problems that can be expected to develop in wartime. In such an organization the economic, political, and operational experience gained would be an ideal background for future joint commanders and staff officers.

This force must be small enough to fit budgetary limitations, balanced to include realistic portions of the service elements required for the mission, and equipped to move and fight with the utmost speed and flexibility. After initial required training, the force could be used to test concepts and doctrine as well as war plans. Under ideal conditions and to obtain the optimum in practical experience, the organization could be moved by air and sea to participate in combined exercises with our allies.

At the outset one such force would be

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established but eventually several of the groups would be organized. As the system progressed it could be integrated into the over-all defense capability of our country.

The troop elements assigned to the force would vary from time to time reverting to their parent service after a period with the joint force.

During rotational periods when no troops were assigned the staff would be occupied in preparing plans for subsequent exercises. Studies, procedures, and operations of the staffs would be correlated closely with material presented at the joint armed forces colleges.

Personnel would be assigned by JCS on a 12-month tour basis and rotated among the services.

The size of the units employed would vary with the forces available and the mission involved. Initially, battle groups, battalion landing teams, squadrons, groups, and small fleet elements would be combined in some instances merely for training and familiarization. Eventually, the size of the force would progress to the division, air force, and corresponding naval elements level. A force larger than this would involve expenditures and forces not normally available for peacetime training.

#### Study Problem Areas

A major contribution of this force to joint operations doctrine would be in the study of specific problem areas.

Two fields of immediate importance to current and future operations that could be studied and field tested now are the Joint Combat Operations Center (JCOC) and the Joint Logistic Force. The JCOC has been tried on an improvised basis in Europe but there is no existing doctrine dealing with this organizational element. Current practice uses the existing Joint

Operations Center (JOC) as a location for a commander who has been delegated authority to release atomic strikes. JOC itself is primarily an Air Force operation center with Army and Navy representation. Separate facilities (Fire Support Coordination Center (FSCC)) control Army weapons and the Navy has similar facilities. What is needed, especially in a task force operation, is a truly JOC operated by a joint staff capable of dealing with all the forces employed in the battle area.

Operation of forces in remote areas requires joint logistic support to the maximum extent possible. No doctrine exists for such a Joint Logistic Force today. Initial studies could be conducted in packaging, transporting, storing, and issuing of common use items and the service element necessary to handle the items.

This discussion is not meant to preclude the development and assignment of uni-service missions nor to prevent the development of organizations and equipment for the employment of land, sea, and air forces. It does, however, point out a means of field testing and evaluation of tactics and techniques under the supervision of the JCS.

#### Conclusion

The scientific genius of the world is rapidly putting weapons that call for radically new doctrine and organization into the hands of the soldier, seaman, and airman. Since these, and future weapons, will be employed in any major effort as a joint service undertaking, the training in the employment of such joint forces should be initiated now. Establishment of these joint forces as a training vehicle will enable personnel of the several services to work together and produce joint doctrine and procedures during peacetime that will result in a more effective effort in time of war.

# MILITARY NOTES

## AROUND THE WORLD

### UNITED STATES

#### Combat Soldier's Pack

The United States infantryman's new individual load-carrying equipment is considerably lighter than the older models, and allows for maximum freedom of move-



US Army Photograph

#### Stripped-down combat pack

ment. It is adapted for use with present and future weapons and equipment, and provides for easier adjustment and assembly of components. As a full pack for use under march conditions, it consists of a 25-pound battle load of weapons and ammunition, 20 pounds of survival items, and 10 pounds of sleeping bag, clothing, and personal possessions. It can be stripped down for combat use.—Official release.

#### High-Altitude Research Craft

The U-2, a jet aircraft designed for research rather than combat, is able to maintain high-altitude flight for comparatively long periods of time. Wide straight wings give the U-2 an increased load capacity to accommodate meteorological data-gathering equipment. Powered by a



Official US Air Force Photograph  
The U-2 research plane

J-57 turbojet engine, the aircraft attains a speed of 495 miles an hour at an altitude of 50,000 feet. It utilizes a tandem landing gear with retractable outriggers at the wingtips to balance the aircraft on the ground.—Official release.

### Radar Booster Tube

A recently developed radar booster tube, the *Amplitron*, is reported to be twice as efficient as previous radar tubes, and capable of making the energy output



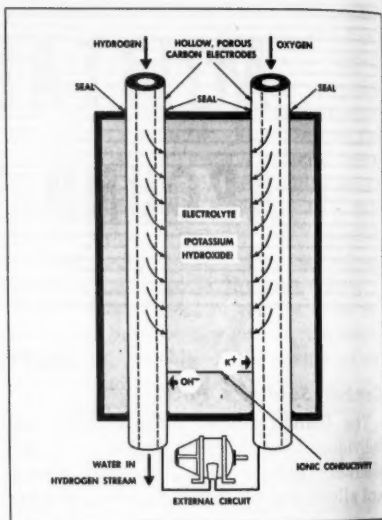
US Army Photograph

#### More efficient *Amplitron*

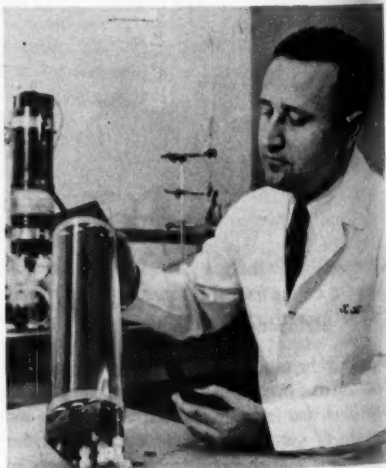
of the radar's basic signal many times stronger. It can handle a power load equal to that needed to light a small town, and provides a constant and unwavering signal 10 times steadier than now possible with the high-powered magnetrons of the radars it is designed to replace.—Official release.

### Hydrogen-Oxygen Power

Direct conversion of the chemical energy of gases into electricity has been accomplished with the development of a fuel cell which uses hydrogen and oxygen for fuel. The cell utilizes chemically treated, hollow porous carbon electrodes through which the gases enter. They also conduct the electricity produced by the electrochemical reaction. The only byproduct of the cell is water which is disposed



Basic design of fuel cell



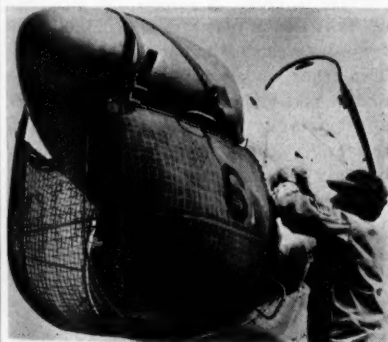
#### Chemical energy power pack

of by evaporation. The cell, which operates at temperatures between 120 and 140 degrees Fahrenheit, has a theoretically unlimited life. Experimental cells have been

operated eight hours a day, five days a week, for a full year without sign of deterioration. Optimum cell design is said to be one which will produce approximately one kilowatt of power from a packaged unit one cubic foot in volume. For an output of small amounts of power, the cell can operate with oxygen from the air. It uses potassium hydroxide as an electrolyte.—Official release.

### Jet Engine Protection

Screens are used to prevent foreign objects from being sucked into the intake of jet engines of Air Force aircraft during test runups and taxiing. The screens are necessary to prevent damage to the



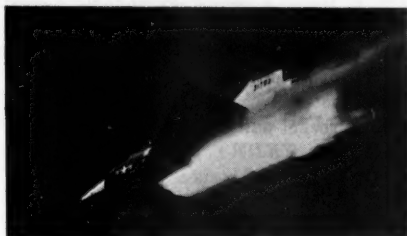
Official US Air Force Photograph  
Screen on air intake of F-86

engines, even though runways are kept clean by giant vacuum cleaners (MR, Oct 1966, p 67). A new type of runway sweeper uses a combination of vacuum and an electromagnet, and cleans a path eight to 12 feet wide.—News item.

### 'Delta Dagger' Armament

Primary armament of the F-102A Delta Dagger, a delta-wing interceptor of the Air Defense Command, is the GAR-2A Falcon missile. Secondary armament consists of twenty-four 2.75-inch Mighty Mouse folding fin aircraft rockets mounted on the missile bay doors of the aircraft.

The rockets are fired from their tube mountings two at a time in 12 rapid pulses. The *Mighty Mouse* is an impact-

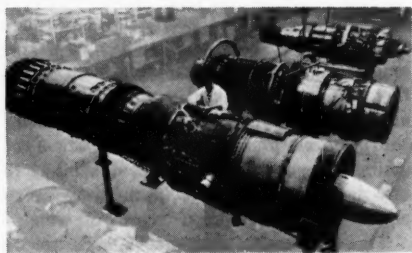


### F-102A firing Mighty Mouse rockets

fuze, solid propellant rocket which is 50 inches long and weighs 20 pounds. It attains a velocity of approximately 2,500 feet per second.—News item.

### Powerful Jet Engines

A B-52 Stratofortress will be used as a test bed for two of the recently developed J-75 turbojet engines. The J-75's



Front to rear, the J-75 with afterburner, the J-57, and the J-47 turbojet engines will replace the four outboard J-57 engines of the 650-mile-an-hour swept-wing Stratofort. The J-75 engine with afterburner is rated at more than 15,000 pounds of thrust. In contrast the J-57 engine, eight of which are normal to the B-52, develops 10,000 pounds, while the J-47 reaches 6,000 pounds of thrust. The J-47 is used as a standard powerplant for the B-47 Stratojet medium bomber.—Commercial release.

### Drone Aircraft

Among the current developments in pilotless target and surveillance aircraft are a rocket-powered expendable target drone, another described as the world's fastest target missile, and plans for the development of two new combat surveillance systems.

The rocket-powered expendable target drone, the *XKDT-1 Teal*, has completed its first test flight successfully. Designed



*XKDT-1 Teal* rocket-powered target for launching from carrier-based aircraft, the *Teal* is 12 feet long, 10 inches in diameter, and has a wingspan of nearly five feet. Its speed is slightly under the speed of sound at 50,000 feet altitude. During the powered phase of its flight the *Teal* emits flares to aid in visual tracking. It also is provided with equipment to score near misses.

The *Q-5* target missile is said to be capable of more than twice the speed of sound. It is 39 feet long, has a wingspan of 10 feet, weighs more than 7,600 pounds, and is to be used in testing the accuracy and destructive power of the nation's missile arsenal. Like the *Teal*, the *Q-5* is instrumented to score near misses and even theoretical hits without being destroyed.

Another high-speed, high-altitude, pilotless jet target plane is the *Firebee*, 30 of which are on order from the United States Navy for delivery to the Royal Canadian Air Force. The *Firebee* is powered by a *J-44* jet engine, and has a top speed of

600 miles an hour. The swept-wing *Firebee* has been flown at distances of more than 100 miles from the electronic remote control unit, and is equipped with a two-stage parachute that permits its easy recovery for reuse.

Two drones for aerial combat surveillance are under development—a propeller-driven type for immediate operational use and an advanced type for future use. Both systems will use such techniques as photography, infrared or radar. They will be zero-length launched and recoverable.—News item.

### Jungle Clearing Machine

A giant machine specifically designed for use in clearing jungle and semijungle areas is now in use ripping a right-of-way for roads through the jungles of Peru. Two other models of the *Tree Crusher* are under test. The machine, which weighs approximately 140 tons, rips trees up by the roots, throws them to the ground, and literally smashes them into pieces. In action, the *Tree Crusher* can clear an acre



### Giant Tree Crusher

of dense jungle every 15 minutes. In tests, it has smashed oak trees 12 feet in circumference. The rollers of the machine are 22 feet wide and nine feet high, and are equipped with 300 heavy steel cleats shaped much like a conventional ax blade. The machine is 19 feet high and 74 feet long, and is operated by one man through pushbutton type control of the diesel-electric power which turns the rollers.—Commercial release.

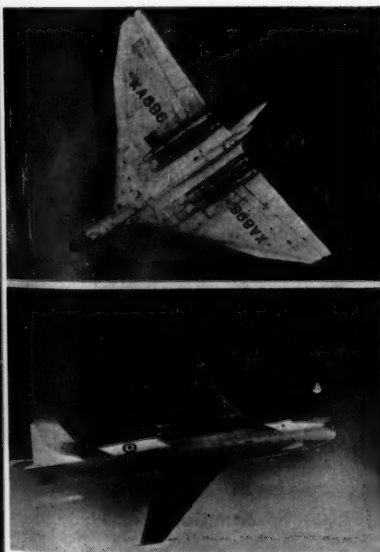
## GREAT BRITAIN

### 'V' Class Bombers

Two of Britain's V bombers, the *Vulcan* and the *Valiant*, are in service with the Royal Air Force, and a third, the *Victor* (MR, Sep 1956, p 73), will reach squadron service next year.

The delta-wing *Vulcan B.1* (MR, Dec 1956, p 70) is powered by four *Olympus* two-spool turbojet engines generating about 50,000 pounds of thrust. The *Vulcan B.2*, an advanced model of this aircraft, will be equipped with the more powerful *Olympus Mk 200* engines.

The *Valiant* (MR, Nov 1956, p 78), which is used as a bomber and on photographic reconnaissance missions, features



V bombers *Vulcan* (above) and *Valiant* the use of electricity for operating the undercarriage, powered controls, wing flaps, bomb doors, fuel pumps, and other functions. The *Valiant* also is to be used in a tanker version for aerial refueling.

The *Victor*, like all new V bombers, will be finished in white antiradiation paint.

Although operational data on the V bombers has not been released, it is known that the *Victor* is capable of exceeding the speed of sound in a shallow dive.—News item.

### Motorized Truck Jack

An electrically driven motorized truck jack developed for the British Army is used as a vehicle parking device. The



### Motorized truck-parking jack

powerful mobile jack is capable of lifting and moving loads up to 10 tons. Push-button controls are located in the steering handle of the device.—Official release.

### Mighty Jet

The *Olympus Mk 200*, production version of the *Bristol B 01 6* turbojet engine, is to be used in the delta-wing *Vulcan Mk 2* medium-range bomber. Developing a thrust of 16,000 pounds, the *Olympus Mk 200* is reportedly the world's most powerful engine outside the experimental category.—Official release.

## ITALY

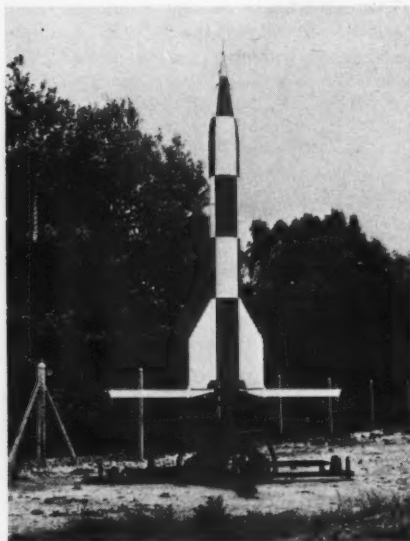
### Antiaircraft Missiles

Three antiaircraft missiles, the *A.R.4*, *A.R.15*, and *C.S.1*, have completed operational tests and are going into production. A fourth type of antiaircraft missile, the *M.R.27*, which has a speed of about 1,000 miles an hour and a range of about 30 miles, is being tested at the Italian missile range on Sardinia.—News item.

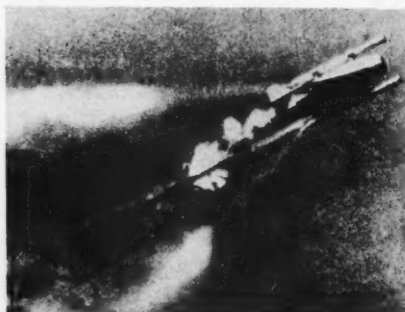
## FRANCE

### Missile Progress

The French missile program includes a complete series of missiles, some of which are in production. The outstanding mis-



Experimental Veronique

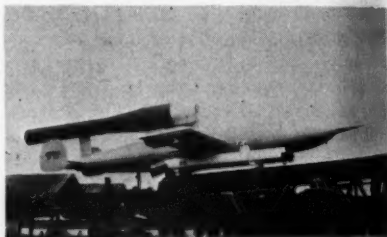


Surface-to-surface Sud-Est 4200

sile is the cable-controlled antitank SS-10 (MR, Oct 1956, p 72 and Aug 1957, p 70) which is under consideration for use by

several nations including the United States, Sweden, and West Germany. Other missiles in the program are:

*Veronique*, an experimental missile propelled by a liquid fuel rocket, is cable-controlled for the first 180 feet of ascent. This 20-foot-long missile is reported to



Arsenal 5501 Drone

have attained a speed of 3,000 miles an hour, and an altitude of 84 miles.

*Sud-Est 4200*, a ramjet-powered, surface-to-surface missile which has the configuration of a small aircraft, is fired from a short ramp with booster rockets mounted



SS-11 antitank missile

above and below its stubby fuselage. It is capable of near sonic speed and has a range of 60 miles. It is radar controlled.

*SS-11*, a two-stage, antitank missile developed from the *SS-10*, has a reported range of 10 miles, and can be fired from the ground or as an air-to-surface rocket. It is now in production.

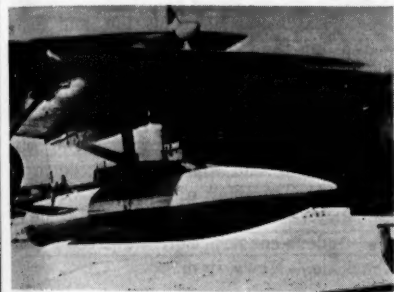
*Matra 051* and *SFECMAS-5103*. Both

of the  
are in  
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which

of these high supersonic air-to-air missiles are in production. They are two-stage, solid propellant rockets designed for either beam-riding or homing heads. A larger



**Air-to-air Matra**

model, the *Matra AA. 20*, which is 10 feet long and propelled by a *SEPR 251* liquid rocket motor, is in production for the *Mystère* aircraft.

*Parca*, a surface-to-air beam-riding rocket with a proximity head, is in production. This liquid-burning missile weighs 2,205 pounds, utilizes four solid propellant

liquid rocket propelled antiaircraft missile which attains a speed of Mach 2, is



*French Embassy Press and Information Division Photos*

**Antiaircraft Parca**

said to have performance similar to the United States *Nike*.—News item.

## BRAZIL

### Reactor Operative

The first nuclear chain reaction in Latin America has been achieved in Brazil's São Paulo "swimming pool" type reactor (MR, Jul 1956, p 70). Utilizing 13.2 pounds of uranium enriched at 20 percent provided by the United States under the "atoms for peace" program, the installation will be used to train scientists and nuclear engineers.—News item.

## AUSTRALIA

### Transports Ordered

Twelve *C-130 Hercules* transport planes, each capable of carrying 90 fully equipped soldiers a distance of 2,000 miles at a cruising speed of 330 miles an hour, have been purchased from the United States for the Royal Australian Air Force. The huge propjet *Hercules* will be used to carry heavy equipment and artillery in support of assault operations, for landing paratroops, and for long-range, high-altitude transport of troops and freight.—News item.



**SFECMAS-5510 Drone**

boosters, and is reported to be able to engage attacking aircraft at an altitude of six miles. It attains a speed of Mach 1.7.

Other developments include the ramjet-propelled, booster-aided, winged *Arsenal 5501* and the *SFECMAS-5510*, both of which are target drones. The *SE 4300*, a

## WEST GERMANY

### Naval Plans

Three submarines have been salvaged by the West German forces and a fourth has been found. The 250-ton *UW20*, the former *U2365* which was scuttled off the Danish coast in 1945 and salvaged last year, has been reconditioned as a training vessel. Two *XXIII* type vessels, designated the *U-1* and *U-2*, also have been salvaged. Undersea craft of the *XXIII* type displace 257 tons, and are capable of a speed of 12.5 knots submerged. The *XXI* class peroxide-powered submarine that was found displaces 1,700 tons, and is capable of 17.5 knots submerged.

Present plans for the West German Navy include 18 destroyers, 40 motor torpedo boats, 54 minesweepers, 10 escort ships, 12 submarines, and 36 landing craft. Purchases of warships planned include seven *Hunt* and *Black Swan* class frigates and three motor torpedo boats from Great Britain, one subchaser and six minesweepers from the United States, and five minesweepers from France.—News item.

## USSR

### Nuclear Warfare Training

Atomic and hydrogen charges in different types of weapons have been tested in connection with Soviet Army and Navy maneuvers according to an announcement by Soviet News agencies. The report stated that the tests were carried out in nonpopulated areas, and at great heights. The testing of atomic tactics and possibly the weapons themselves is believed to have been included in the Soviet Fleet's fall

maneuvers in the Barents and Kara Seas.—News item.

### Missile Stations

Soviet missile bases are reported to have been established at Kraskino and Slavyanka on the south shore of Peter the Great Bay between Vladivostok and the North Korean border, and the entire 115-mile-wide bay has been closed to foreign shipping. Construction of the two missile bases is said to have been completed during the summer of 1957. It was also reported that special submarine facilities are under construction at Poset, near Kraskino.—News item.

### Missile Claims

The super-long-range, multistage intercontinental missile announced as successfully tested by the Soviet armed forces attains an altitude of 600 miles, and strikes the target at a speed of 15,000 miles an hour according to a Russian missile expert. The report stated that the missile can be armed with a hydrogen bomb, and estimated the deviation of the weapon from the expected target to be no more than six to 12 miles.

A new type multipurpose guided weapon which will be effective as a surface-to-air or air-to-air missile, and also double as an auxiliary powerplant for aircraft, has been announced. The missile is reported to weigh 220 pounds and have a top speed of over 4,000 miles an hour. It carries a target-seeking device for homing on targets. A system for remote control of the missile is said to be under development.—News item.

The MILITARY REVIEW and the U. S. Army Command and General Staff College assume no responsibility for factual accuracy of information contained in the MILITARY NOTES AROUND THE WORLD and the FOREIGN MILITARY DIGESTS sections of this publication. Items are printed for the purpose of stimulating discussion and interest, and no official endorsement of the views, opinions, or factual statements is to be implied.—The Editor.

# FOREIGN MILITARY DIGESTS

## National Defense and Military Resources

Digested by the MILITARY REVIEW from an article\* by Marshal  
A. Juin in "La Revue des Deux Mondes" (France).

THIS is not the first time since the world began and men have been killing one another that it has been realized that whatever is discovered or invented the course of a war always will remain closely dependent on chance. It is for this reason that wise brains have always recommended that a war should not be undertaken unless and until you possess equipment properly adapted to the conditions of the struggle to be maintained—that is, the equipment best suited to your concept of that struggle.

By equipment must be understood not only the instruments of destruction and protection which science places in men's hands, but also the moral preparation and the training of those who are called upon to use them, and the method of operating them so as to secure the most effective use. This, in turn, involves tactics or the theory of employment.

Theory is something which counts in a war. Once it has been assimilated and

becomes automatic to commanders and subordinates, we find that it absolves them from thinking. This can have serious consequences when, in the first encounter, the theory proves inadequate in the face of surprises which had not been envisaged.

Again, it is important that the theory should be conceived after mature consideration, and should take its inspiration from all the duly verified or even conjectural facts relating to the subject. All the great captains of history have devoted themselves to this labor of adaptation before challenging the fortunes of battle. There is no doubt that, even if it did not result in the discovery of an infallible system, their effort of reflection had a large share in the genius they later displayed in the course of their campaigns.

In the same way, after every war or on the appearance of a new weapon, we have seen military theorists striving by reasoning to construct the theory which appeared to correspond most closely with the data collected and the expected consequences of the new weapons.

It must be admitted that they have not

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always achieved this in the most logical way, and that they often have been out of date or on the wrong lines at the opening of subsequent hostilities.

Thus without going very far back, we find in France, in the years preceding 1870, our academic theorists, impressed by the havoc caused in the French ranks at Magenta and Solferino by the Austrian artillery and later by the adoption of a rapid-fire rifle (the *chassepot*), recommending and insisting on the importance of remaining in good positions in order to secure the greatest advantage from the increase in firepower. This radical change of theory on the eve of war naturally was bound to cause confusion in the minds of leaders who had hitherto been trained on attack; Wörth, Forbach, and the battles below Metz and Sedan were the melancholy consequence.

After 1870, once the French Army had been reformed, a return to offensive theories was set in motion. This development was accentuated shortly before 1914 in the fever induced by the signs indicative of a coming conflict. But the balance was exceeded in the sense that mind, moving away from matter and reality, ended by endowing the offensive with purely metaphysical virtues and by neglecting to study the modes of employment of the various arms in close cooperation. On the eve of war in 1913 belated regulations did indeed try to establish one or two principles, but through lack of time these were not assimilated by those who had to carry them out at the tactical level; and there followed the shocks and slaughter of the battle on the frontiers which were due largely to our incompetence and to disparities between movement and fire.

It was to take nearly three years after the recovery on the Marne—achieved as by a miracle thanks to a spurt of energy and to the undeniable efficiency of our 75-mm field artillery piece—to establish a theory of offense based on a more care-

fully studied agreement between the tactical procedure of the infantry and the increased power of supporting arms. From the end of 1917 onward the equipment was good, even if still somewhat restricted by excessive prudence and method. It was to triumph in the gigantic decisive battle conceived by the genius of Marshal Ferdinand Foch in the last months of the campaign in France.

### The Lesson of Victory

Unfortunately, it is the privilege of victorious nations to rest on their laurels. When peace is restored, the lessons of the past are profitable to soldiers only when they recall humiliating and sorrowful memories. During the 20 years separating the two World Wars, imagination was curbed, so to speak, in the French Army. It was forbidden to move very far from the methods and procedures which were the fruit of long and costly experience, which had secured victory, and which were the objects of a blind faith.

In the sluggish state into which we had sunk, insufficient attention was paid to the progress which had taken place in arms of which we were the inventors—a progress which was soon to make of them exceptional instruments for the offensive and for exploiting success. Light bombers were neglected, not to mention long-range bombers, and, on the eve of World War II there were still many in the French Army who believed that the tank, as a powerful shock weapon, should be used primarily for breakthrough attacks which would be methodically mounted and aimed at limited objectives. Lightly mechanized divisions operating on foot were considered to be excellent but better suited to acting as a screen along broad fronts than to concentrating in order to drive in a given direction. As for our armored divisions, the war overtook us while they were still being organized and while the logical principles of their employment were still being sought.

Clouded by the concept of firepower and an obsession with meeting engagements in the first days of hostilities, our theory, as regards the offensive, was rigid, determined to advance only by measured stages. Where the German, inspired by a more lively fire and imagination, had devoted all his efforts to forging for himself a redoubtable spearhead which he was able to place in the hands of resolute and astonishingly well-trained commanders, the French refused to be the first to attack, and dug in for nine months along a Maginot Line which had been designed to economize troops in order to provide mobility but which was not even used for this purpose when the time came. This was clearly a mortal sin, and in 1940 our defeat was consummated in a few days.

What is the theory now? It is still in process of development, although by now it has gone beyond the stage of first principles to enter that of adaptations and procedures.

It must be admitted, in justification of the delay in its evolution, that the appearance at the end of the war of atomic weapons of remarkably increased power completely overthrew the ideas acquired in the course of preceding wars, including the last. This experience was limited to the use of traditional weapons and now is irrelevant. Everything must be rebuilt on new facts provided solely by experimental explosions, and this is no easy task.

It should also be noted that the evolution of this new theory is faced with the difficulties, always experienced within a coalition, of reconciling differing points of view. Furthermore, the theory is defensive in principle, since the Atlantic coalition, which has no intention of being the aggressor, is concerned at first only with establishing a defensive system. The war thus envisaged may begin badly for us with our adversary being completely free to prepare for it when he desires and to

begin it by surprise, dealing those first blows which always are the most dangerous.

### Shield and Javelin

The concept of defense evolved to meet such an aggression always has included, whatever the equipment actually used, what might figuratively be called a shield and a javelin—a shield to deaden the first blows, lose as little as possible of our territory, and give us time to collect and bring to bear the weapons of offense which constitute the javelin, the weapon of decision.

In the past the rules of the game involved, for self-protection, the positioning on the frontier of the densest possible mass of combatants, equipped with efficient but short-range weapons of a type more or less current among all the nations. In the future we must expect the terrifying surprise effects of atom and thermonuclear bombs capable of creating general paralysis within a few days, if not a few hours.

In the past, again, once the enemy had been halted and one's own resources collected, the aim was to go over to the offensive in accordance with the rules of conventional strategy which involved, if not the annihilation of the enemy forces in battle, at least their progressive attrition and the repulsing of the remnants to their own territory. Hence a slow rhythm, although the advance in conventional aircraft in the last war enabled this to be accelerated considerably.

Today, with the use of nuclear weapons, it is to be feared—as I have said already—that the shield will shatter and that paralysis will intervene before any reply can be made.

To prevent this it is essential that the screen should hold, thanks to appropriate protection and tactics, and that the interior, protected in turn to the fullest possible extent, should manage to survive. But above all it is absolutely necessary to

have available a powerful instrument of offense, based on new weapons. It must be capable of paralyzing the aggressor in his turn, once aggression is unleashed, by striving to destroy his potential both at the sources of its production and on the lines of its transportation and at the places of its use.

This instrument—which is still based on aircraft as its mode of transport, until such time in the near future as aircraft are replaced, partially at least, by long-range guided missiles—is now in being, and there is no doubt that in these days it constitutes the decisive weapon, if there is to be a decision. For who can guarantee that, once the devastating deluge and the persistent radioactivity with which we are preparing to swamp the tactical and strategic areas of an entire hemisphere have passed, there will be a victor and a vanquished? There are even grounds for supposing that the maintenance of peace, in Europe at least, until now has been due as much to this uncertainty as to the horror inspired in men by the use of such weapons.

### The Task

In this case it may be asked, how do you define the tasks to be assigned to ground and naval forces in the future? Obviously, they will no longer be the essential instruments of decision. However, they will make a considerable contribution by protecting territory and the main ocean routes, and by helping us to survive, and their task will not lack greatness.

It is difficult to imagine that the ground forces, which form part of the shield and which must constantly be held ready for action, do not permanently possess all the resources they require or that they are not already in position. Nevertheless, they still fall far short of the degree of preparedness and availability of the jave-

lin. Although the use of the tactical atom bomb and the proposed cooperation of German forces have now relieved many anxieties caused by the numerical superiority of our possible adversary, it remains true that there is still much to do in the modification of organization and in tactical procedures.

Work certainly is being done on this, but only slowly, each country having its own ideas. It is an achievement that we have been able to agree on a frontline strategy which involves covering the maximum space consonant with the laws of atomic warfare; and also on the need for correlated measures aimed at the protection of armies and civilian populations (dispersal, passive defense, surface defense). But there is still sharp discussion about the tactical modes which ultimately will determine reforms in organization.

Some people, denying the possibility of movement in atomic warfare, want large and purely static formations to hold ground more firmly, defend themselves better, reduce impedimenta, and lighten the logistic burden. Others, on the contrary, would like to see the new formations much smaller, endowed with power, flexibility, and mobility so as to be able, by constant movement, to evade atomic threats and concentrate in the shortest possible time at selected points of attack. No doubt the truth lies between these two extremes, and the French General Staff has not been slow to seek it on these lines.

Experiments carried out in the last two years with two light motorized infantry divisions and one mechanized division have enabled us to clarify our ideas in this respect and to present an objective scheme for what is required. This is not yet unanimously accepted, but I am convinced, for my own part, that it will prove valid after some minor but necessary alterations.

## The Demyansk Pocket, March-April 1942

Translated and digested by the MILITARY REVIEW from an article by Lieutenant Colonel Joachim Schults-Naumann in "Allgemeine Schweizerische Militärschrift" (Switzerland) November 1956.

EARLY in 1942 the Soviets, in a farflung operation, had encircled the German II Army Corps and parts of the X Army Corps with a double offensive thrust from the south and the west. Soviet units also attacked from the north across frozen Lake Ilmen and then continued south along the Lovat' River. On 8 February 1942 they linked up with the Russian forces coming up from the south. The latter had pushed to the north with ski brigades, tanks, and divisions capable of mobility in the wintertime, and had followed the course of the Lovat' northward. In the cold of the Russian winter, when 30 to 50 degrees below zero weather was not uncommon, the superior Soviet forces, prepared as they were for winter warfare, were able to drive through the German divisions which were not equipped for winter combat.

Although Field Marshal Wilhelm Ritter von Leeb, Commander in Chief of the Northern Army Group, had predicted encirclement unless the six divisions of the II and X Army Corps were pulled back, Hitler wished this area retained as a base for a new offensive in the spring. After the encirclement, therefore, he gave assurance of all help possible to the II Army Corps. He commanded that "Fortress Demyansk" be held to the last man.

Through the entire month of February ceaseless enemy attacks were repelled on almost all the fronts of the pocket. The focal points of the fighting in February were the south and western fronts of the pocket, but no less violent were the attacks on the northern and northwestern fronts. Here the intention unquestionably was to split off the west portion of the pocket by means of an irruption into the Pola River valley.

A point of particular danger, however, was the northwest front where great breaches yawned in the impassable, swampy, wooded terrain around Zamoshka, Pustynya, and Lyanno. Near Pustynya was a breach three miles wide over which the infantry was not able even to maintain surveillance with the scanty forces available. Snow 40 inches in depth and terrain covered with primeval forest growth made patrol of this area impossible in the absence of ski troops.

Any security that could be attained was possible only on the basis of strong points dependent, in turn, on existing settlements. The Soviets turned these difficulties to their own advantage and, at the end of February, a tank task force had penetrated nine miles into the deeply snow-covered and trackless Polomet' valley before it was repulsed.

Beginning with 1 March the enemy maintained constant pressure on the Pustynya, Zaprudno, and Lyanno strong points without being able to make any appreciable penetration. Two Soviet ski battalions did break through to the north of Pustynya, but the 1,000 men of this force were virtually annihilated by the rearward firing guns of the German artillery.

This action by the enemy—by which he planned, first, to plunge into the depths of the pocket and, secondly, to break out important sectors of the front—was only the forerunner of a large-scale operation clearly aimed at the headquarters of the II Army Corps and the Demyansk airfield. The Demyansk pocket was to be split up from within in coordination with attacks on the external fronts of the pocket.

### Paratroop Attacks

At the beginning of March 1942 II Corps Headquarters was in Dobrosli, two miles

west of Demyansk. The Demyansk airfield was the headquarters for the air supply of the entire combat area. The alternative airfield at Peski had far less capacity than the big Demyansk field. Both the enemy and the Germans knew that when the command and supply setups were knocked out, the fate of the 100,000 encircled men would be sealed.

During the night of 8-9 March 1942 the Soviets broke through the trackless, swampy, wooded area to the south of Pustynya and by dawn of 9 March part of their forces were astride the Solovevo-Vesiki supply route. Rear area and reserve forces finally forced this enemy group to fall back. A captured enemy situation map showed that their objective had been Demyansk. In the impenetrable wooded and swampy area to the east of the Polomet', however, the whereabouts of the main body of the attacking force was difficult to determine. To the headquarters of the II Army Corps, this action was a warning to adopt measures for the protection of Demyansk without delay. The 30th Infantry Division also organized a strong point defense for the Polomet' valley and was given two battalions of reserve troops.

In the paratroop attacks which began in the days which followed, two points of main effort were discernible. The principal attack of a strength of two brigades was directed against the corps headquarters and against the Demyansk airfield, while one brigade which landed in the north sector of the 30th Division was to link up with an enemy from the north. Although the enemy was prevented from achieving his end objective, the German command for a week was forced to employ countermeasures of every type, mostly improvised, such as the formation of alarm battalions, and the removal of forces from fronts not under attack which made the highest demands on maneuverability.

On 10 March enemy ski units again crossed the Solovevo-Vesiki supply route with a force of around 1,000 men. The corps ordered the 30th Infantry Division to close off the point of the enemy breakthrough by attacking along the west bank of the Polomet' from both the north and the south. Additionally, a battalion strong point was directed to be established to the northwest of Solovevo.

Information as to the strength and location of the enemy forces that had infiltrated across the Polomet' on 9 and 10 March and to the east was of increasing importance to the headquarters of the II Army Corps. Although the reinforced German forces succeeded in defending their system of strong points, the situation on this sector, where the adversary had every terrain advantage, remained critical for weeks. North of Vyasovka infiltrated enemy forces interfered to a serious degree with the supply movements to the front. As long as the breaches between Pustynya and Vyasovka remained open, the enemy could continue to filter through.

On 12 and 13 March supplies and more Soviet troops were parachuted into the Nevii Mokh swamp to the north of Demyansk.

#### Counterattack Plans

Two unsuccessful attacks were conducted on 14 March against the Soviet forces in the Nevii Mokh swamp west of Maloye Opuyevoye. The strength of the enemy was estimated at from 1,500 to 2,000 men at this time.

The corps considered that the situation would worsen in the Demyansk area because of the reinforcements they had received by paratroops. Having no forces capable of maneuvering under winter conditions, the corps requested the army to assist combat by the use of aviation.

The division engaged in defense at Maloye Opuyevoye was to be reinforced, but before these reinforcements could become

effective, the enemy seized possession of Maloye Opuyevo and at dawn of 15 March attacked Bol'shoye Opuyevo with 800 to 1,000 men and considerable air support. All forces in and around Demyansk were alerted, and two battalions and a reinforced company were added to the forces defending Demyansk and the corps headquarters.

On this day the enemy again succeeded in effecting a penetration in the vicinity of Pustynya and pushing forward eastward across the Polomet'. Even though a start had been made toward occupying a continuous line of strong points along the Ilomlya-Vesiki supply route, it had not been possible to fill out this line completely due to shortage of forces. Heavy weapons also were lacking.

The enemy's attacks in the northwest at Zamoshka and Zaprudno, as well as his activity northwest of Dedno, were considered to be related to the actions on the Polomet' and in the Nevij Mokh swamp. On the evening of 13 March the situation was extremely confused, since neither the strength of the enemy in the Nevij Mokh swamp nor the location of the enemy forces reported to be advancing on Demyansk from the north could be determined. A night attack on the Demyansk airfield, therefore, was to be expected, and the headquarters of the II Army Corps was shifted from Dobrosli to Borovich, six miles east of Demyansk.

During the night of 15-16 March the enemy elements in the Maloye Opuyevo area were again supplied from the air. No attack occurred on the Demyansk airfield.

### Enemy Intentions

Regarded as a whole, the following enemy intentions were evident on the pocket fronts:

1. To cut off the west part of the pocket by an attack from the north along the Polomet' River.

2. To effect a breakthrough on the south front of the pocket.

3. To knock out the north and northwest fronts (30th Infantry Division).

4. To seize possession of the principal center of the pocket—the city of Demyansk. This was indicated by the infiltration and dropping of enemy parachute forces into the Nevij Mokh swamp.

The corps reported this estimate of the situation to army headquarters and stressed the fact that an early attack from the west by a German relief force was vitally necessary.

### Action in the North

The situation remained tense on all the fronts but especially in the north where the 30th Infantry Division had to repel enemy attacks everywhere and attacks from the rear by infiltrated enemy forces had to be expected.

On the following day the rear area of the 30th Infantry Division remained under constant enemy threat, especially in the Vol'noye Berezhno area. It had not been possible to clear the supply route along the Polomet' valley. On 17 March an enemy parachute brigade even crossed the Vol'noye Berezhno-Zabolote supply route from south to north, threatened the rear of the front at Lychkovo, and blocked the only supply route over which all supplies for the left wing of the 30th Infantry Division passed.

When elements of the parachute unit had attacked in the north and penetrated into the brush-covered area south of Lychkovo, an attack on Lychkovo was started by enemy forces from the north; despite these attacks the Lychkovo sector held. In addition to this the front at Zamoshka and Zaprudno, which was already strained to the breaking point, was again attacked from the west. On all these sectors the fighting continued on into the night. Even

around Zabolote, from which an attack on the enemy south of Lychkovo was to be conducted, fighting broke out.

When the situation had become threatening on all the front sectors under attack, two battalions of reinforcements from the corps arrived during the night. These succeeded, after hours of fighting, in clearing the blocked supply route in the Polomet' valley between Solovevo and Vesiki, and remained at the disposal of the 30th Infantry Division. With these reinforcements the German forces, attacking from Vol'noye Berezhno along the Berezenka valley, finally succeeded during the course of the forenoon of 18 March in relieving Zabolote and in opening the Vol'noye Berezhno-Zabolote supply route. The Luftwaffe gave effective support to the German attack.

The pressure of the enemy attack on the outer front was not broken during this day. On the contrary, he kept repeating his mass attacks on into the night. Very considerable enemy forces which had fallen back from the Zabolote area succeeded in escaping northward into the wooded terrain southwest of Lychkovo. They there joined other enemy forces in this area.

Due to the increasing seriousness of the situation, an additional infantry battalion was moved to the north to add to the strength of the 30th Infantry Division.

During the night of 19-20 March reconnaissance succeeded in locating the assembly area of the remnants of the parachute brigade which had moved up to the vicinity of Zabolote. Since German forces were insufficient for encircling them, it was decided to push them back northward across the main line of defense into the enemy lines. When this idea was put into operation early on 20 March, there began, simultaneously, the long anticipated major Soviet attack on Lychkovo. It was accompanied by attacks in the Volodikha and Zaprudno sector. After the failures of the preceding days, the enemy

now was bent on knocking out the entire arc of the 30th Infantry Division's front.

His intentions were frustrated, however. The German defenders succeeded, by means of artillery fire systematically shifted from sector to sector and closely followed by their own infantry, in driving the enemy parachute units to the north. The enemy attacked from the north and seized possession of a one-half mile stretch of the railway line which passed west of Lychkovo. But before the enemy could consolidate the position, he was caught by a flank attack and thrown back across the main line of defense with the remnants of the parachute forces who were attempting to escape.

The end result of the day's operations was the annihilation of the Soviet 2d Parachute Brigade. The enemy's losses ran into the hundreds. The German defenders were able to bring in only 50 prisoners, however, as they lacked adequate forces for a systematic combing of the terrain. For weeks after this, however, scattered enemy groups continued to hold out. They were picked up later in mopping-up operations.

In spite of days of violent attack from front and rear, the 30th Infantry Division had not only held its position, but had been able to crush the enemy to the rear. The erasure of this portion of the pocket front had failed.

#### Fighting West of Demyansk

While the fate of the Soviet 2d Brigade was being sealed between Polomet' and Bereska, the two parachute brigades that had landed in the Nevij Mokh swamp were wasting away in piecemeal attacks west of Demyansk. The 12th Infantry Division was in defense of the Demyansk area.

For some strange reason the two enemy parachute brigades remained inactive on 18 and 19 March. Security and defense preparations were continued in and around Demyansk without enemy interference.

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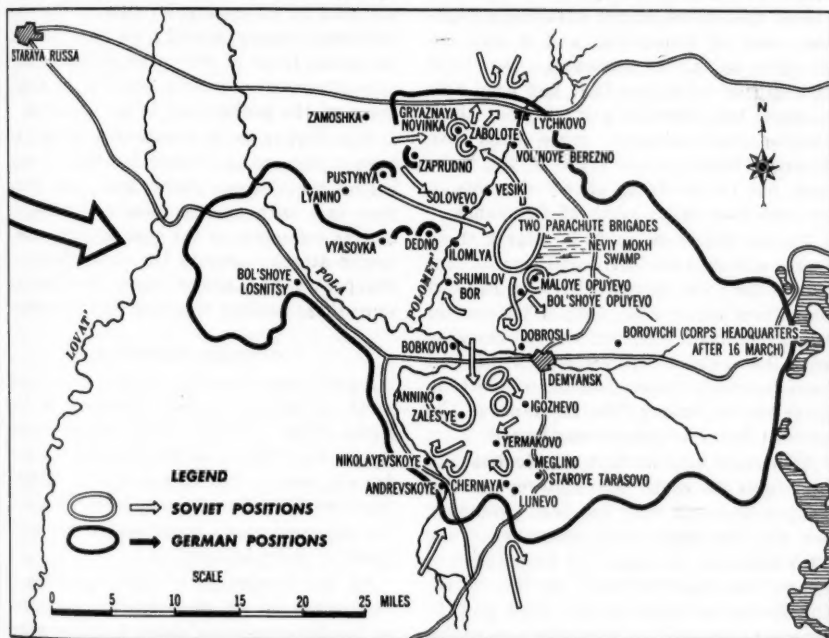
brigade and that the swamp attacks were Di- nyansk

enemy was to be expected. According to the statements of a pris- oner captured at Dobrosli, the enemy had the mission of capturing the command staff which they thought to be in Dobrosli.

On 21 March the enemy attacked the former Dobrosli command station (the corps headquarters had moved to Boro- vichi on 16 March) with a force of around 200 ski troops. But both here and in another attack on Shumilov Bor to the north- west he was repulsed. Four enemy radio transmitters were spotted in Maloye Opu- yevo. In addition, the enemy engaged pa- trols in every direction out of this locality.

For the further reinforcement of the Dem- yansk front, an additional infantry bat- talion was placed under the orders of the 12th Infantry Division.

Contrary to all expectations the enemy remained inactive on 22 March. Both So- viet and German patrols were active, and an enemy forest camp west of Shirkovo was shelled by German artillery. On the basis of the enemy's behavior and the re-



There also was great enemy air activity. The Demyansk airfield was attacked by ground support planes.

In view of the lively enemy activity, an attack by stronger forces on the Dem- yansk airfield and the automobile highway extending westward from Demyansk now was to be expected.

According to the statements of a pris- oner captured at Dobrosli, the enemy had the mission of capturing the command staff which they thought to be in Dobrosli.

sults of the German reconnaissance it was clear that the Russian forces, seemingly in individual groups, were deployed over a broad front north of the Demyansk- Bol'shoye Losnitsy automobile highway. No reason was discovered for the Russian delay in conducting a concentrated attack.

#### Breakout Attempts to the South

On 23 March another group of enemy forces was repulsed at Dobrosli. An at- tack on the automobile highway to the

west of Bobkovo was but partially repulsed. East of Bobkovo the enemy with about company strength succeeded in breaking through toward the south and in temporarily barring the highway. It was, however, cleared again of the enemy by the German security forces in counter-attack, and wholly secured.

During the days which followed the Russians continued very active in individual operations on the automobile highway west of Demyansk, and it was impossible to know accurately the total strength of the forces that had been able to cross the highway prior to that time. Combat reconnaissance came upon two deserted forest camps south of the highway, but found strong enemy elements in an area four miles south of Demyansk.

During the night of 24-25 March these forces attacked the divisional combat station of the 12th Infantry Division in Igozhevo from three sides. Only after several hours of hard fighting was it possible, with the aid of reinforcements which had been hurriedly dispatched for support, to drive out the enemy. The remnants of the enemy forces withdrew southward.

It became evident that the Soviets had been able to cross the highway in far greater strength than had been presumed, for the divisional staff quarters of the 12th Infantry Division had been attacked by no less than 500 men. In this action the Russians had lost 181 dead and 16 prisoners, as well as weapons and equipment of all types. German losses were five officers and 28 enlisted men killed and 37 wounded.

On the following day the fighting south of Demyansk continued. Violent fighting was required to clear the enemy from the Igozhevo-Yermakovo highway. As in the area to the rear of the 30th Infantry Division, it had to be expected that the enemy would attempt to create confusion in the rear of the 12th Infantry Division and make use of routes, river valleys, and

wooded areas to break outward through the front. In the Meglino-Staroye Tarasovo area the enemy suffered heavy losses in the execution of this plan.

While the fighting south of the automobile highway went on with center of gravity in the rear area of the 12th Division, the enemy north of the Demyansk front displayed no more activity. Only the Maloye Opuyevo strong point was still occupied by the enemy. In view of the concentrated enemy activity to the rear of the south front of the corps, however, enemy attacks at any time against the outer front of the pocket had to be expected.

The Soviets made continuing efforts to open a passage southward for their forces behind the German front, but even when they met with success now and then, it had no influence on the over-all situation. Soviet attacks against the outer front of the pocket at Lunevo were repulsed as were those against the rear of this sector.

### Continuing Operations

Supply camps and an airfield discovered north of the automobile highway in the Nevy Mokh swamp were taken under fire by the artillery on 29 March. The same day the enemy was driven out of Maloye Opuyevo. He suffered heavy losses. Numerous prisoners and a great deal of captured matériel were brought in.

At the conclusion of this operation a slackening up of the security measures on the Demyansk-Bol'shoye Losnitsy automobile highway was ordered, as no more strong enemy attacks were to be anticipated. It is true that for days flare signals between enemy aircraft and residual enemy groups in the Nevy Mokh swamp as well as landing attempts on the airfield there were to be observed, but an end was put to them by artillery fire. These events were no longer of any consequence.

Thus during the period between 21 and 29 March 1942 the Soviet 1st and 4th Parachute Brigades lost around 1,500 men

killed, numerous prisoners, about 100 machineguns, mortars, and other weapons. According to prisoners' statements the German artillery fire had a particularly devastating effect on enemy concentrations and forest camps. Due to ammunition shortage, however, fire was laid down only when the position of these camps was positively known.

During the first days of April almost all combat activity had ceased in the rear areas of the 12th Infantry Division. Only in the area around Zales'ye were additional forces of the parachute rifle formation found and destroyed in mopping-up operations. Remnants of this unit continued to hold out in the inaccessible wooded region south of the highway. Prisoners reported that some of these forces were planning to break through from south to north across the highway at Krivaya Chasove. A battalion posted there to block their passage was not obliged to go into action, however, as the enemy did not attempt to carry out his plan.

The enemy's attempt on 2 April to force the main line of defense at Chernaya in a surprise assault from the rear failed. The situation in the Zales'ye-Annino area became critical again when an enemy force of 400 men attacked, but this also was repulsed. To the north of Andrevskoye an attempt by the enemy to break through the front toward the southwest was frustrated. It became apparent that although the Russian forces around Zales'ye had suffered heavy losses, very large groups still remained hidden in the wooded area. They were maintained by means of supplies dropped at night.

The last major attack was made by the Soviets on 8 April with a strength of 600 men against Nikolayerskoye. An attempted breakthrough toward the southwest was frustrated. The Soviet brigade commander was captured, while among the 300 dead, in addition to many other officers, was the Soviet commissar. He had

been the animating force in the last efforts at resistance. This was learned from the interrogation of the brigade commander who stated that, although the commander of a brigade, he had, at the same time, command over all three brigades.

Due to this ill-advised command arrangement, the brigade commanders were soon at variance with one another and the activities of the three brigades became uncoordinated individual operations. When the commissar finally was flown in to ensure a unified command, the brigades already had lost a large part of their shock-power, and the surprise factor of their first appearance was gone. Their last, hard attacks were only of local significance.

### Concluding Observations

The Soviets had not been able to achieve their aim of cracking open the pocket from within and splitting it up into a number of smaller pockets. They must have been very anxious to do this before the beginning of the relief attack from the west, and the arrival of the thaw period. The relief attack had started its action against the enemy in the pocket on 20 March. This occurred at the same time that the fighting on the north and northwest both around the perimeter and within the sector of the 30th Infantry Division had resulted in an extreme threat to the Demyansk area.

Skillfully planned and, in its initial phase also skillfully executed, the operations of the three parachute brigades—the main body of which had infiltrated by land and parts of which had been dropped from the air—became split up into dissociated, individual operations. Only in the southern area of the pocket had they been able to create any great threat. Their temporary tactical successes on the northern and southern fronts were entirely inconsistent with their actual strength.

Success would unquestionably have been on the Soviet side if a main effort by all

three brigades against the junction point between the 30th and the 290th Infantry Divisions (which the attack on Demyansk would have had to follow) had been formed. Since there was lack of systematic

and flexible execution of decisions in this undertaking of the Soviet command, the German forces were able to achieve a defense victory over the enemy both within and without.

## Problems of Atomic War

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ACCORDING to prevailing doctrine, the beginning of an atomic war will come with one power making a heavy surprise nuclear attack on the command, communication, and production centers of another. After this atomic attack has been made on him, the adversary is assumed to be quite able to strike back with similar weapons.

The great significance of surprise in the initial attack heightens distrust in international politics, for surprise is most effective when an attack has not been anticipated. The assumption of the possibility of striking back is justified, since the first atomic attack probably would not be capable of destroying all of a nation's airfields, aircraft, and weapons.

Two important consequences derive from the possibility of striking back. One is the so-called strategy of retaliation of the United States. This possibility relieves the United States from the necessity for a preventive war against the Soviet Union. The second consequence which comes from the possibility of a counterblow is the deterrent theory which claims that an atomic war is accompanied with such great risk that such a war is made quite improbable.

However, the possibility of retaliation cannot but lead to unrestrained atomic war of considerable duration accompanied by unimaginable destructions in the territory of both adversaries. Those who count on the possibility of obtaining a

decision in an atomic war have no conception of what their own country would look like after even a very short atomic war. It is true that we have no dependable experiences relative to the measure of the destructive effects on the life and mentality of the population, on their social establishments, their towns and cities, their communication networks, and their production facilities that would be produced by the atomic weapons. We are only certain that these effects would be devastating.

Even if one of the belligerents lost his ability to fight sooner than the other, the wounds of the victor would be so great that he probably would not be able to exploit his "victory." We have no clear idea of the nature of a decision in atomic war. This seems even more grotesque when we consider the nature of the decision in classical warfare, concerning which perfect clarity exists through centuries of experiences. Here, the decision was premised, as a rule, on the retention of resources and considerable residual combat capacity after the defeat or capitulation of one's opponent. This permits far-reaching freedom of action on the part of the conqueror, even if not always to the extent desired.

### Advantage and Disadvantage

How can one equally armed adversary become incapable of further combat sooner than the other? Superiority of leadership, which was of such great importance

in classical warfare, would hardly play any great part. On the contrary, an advantageous situation can be a matter of great import if it exists only on one side. In the case of a conflict between the United States and the Soviet Union, after the latter has attained a state of armament equality, America's overseas bases, for example, constitute an enormous advantage.

They permit attacks from all directions at relatively short distances from the targets as long as the Soviet Union does not succeed in knocking them out with bombers or long-range missiles. By means of them, simultaneous attacks against many targets, producing surprise and making defense uncommonly difficult, are quite possible. Medium jet bombers which are available in great numbers, but which do not possess intercontinental range, can be employed in these attacks.

At the same time, the disadvantage exists that the vital structure of the West, as a result of the massing of its population in large cities and the concentration of its industries, is much more vulnerable to attacks by atomic weapons than that of the East. One atom bomb can produce more destruction there than several of them in the Soviet Union. The advantages and disadvantages, of which only two have been mentioned, may well cause one of the adversaries to become incapable of further combat before the other.

After all, the probability cannot be rejected that an atomic war would end with the exhaustion of both adversaries and that there would not be anything that could be called a decision. The result of such a war could only be that the territories of both participants would be nothing but highly radioactive fields of ruins with a biologically injured population.

Although atomic warfare represents something entirely new, something that cannot be tied to experience, there seems to be an inability to refrain from the em-

ployment of the ideas and concepts proper to classical warfare. Thus the fact is not recognized that atomic war is not the means to the end that we have always associated with war.

### Inexpedient Theory

No war objective can be of such great significance that it is purchased at the cost of the destruction of a large portion of one's own country and population, as well as jeopardizing humanity's vital requirements for survival. For this reason it is quite obvious that the theory of atomic warfare must be wrong, or at least inexpedient. Yet on such a theory rests, among other things, the security of Europe.

It is very questionable whether there would ever have been so exclusive a basing of warfare on atomic weapons if there had been any prior understanding of its utterly unprecedented powers of destruction. In World War II, by tacit accord, the nations voluntarily refrained from the use of the fearful weapon of war gases. Now, however, there exists a terrible tragedy in the fact that men no longer acted voluntarily but out of compulsion when they made the atomic weapon the basis of warfare.

This came about as a result of the complete disarmament of the west after World War II and the incomprehensible unwillingness of the European states, in spite of the excessive state of armament of the Soviet Union, to bring their armament back to a suitable level. The Western Powers had no force at their disposal with which they could have opposed the far superior Soviet ground forces.

The only way in which this could be counterbalanced was by means of atomic weapons which, along with delivery means, have been continuously improved until finally the present stage has been reached. Also, the fulfillment of the desire of all mankind that they be freed from the threat

of atomic weapons is made impossible by the continuing Soviet superiority in ground forces. The Soviet's enormous reservoir of trained reserves hinders any approach to a realization of this desire, even on the assumption of a thoroughgoing and general disarmament.

### The False Conclusion

Since aviation is the backbone of atomic warfare, America and the European states have drawn the dangerously false conclusion that ground forces may be neglected almost to the point where they are of insignificant worth. The effect of this on the European NATO states has been that their assigned quota of forces has hardly been half reached and all continuation of armament in this direction is practically at a standstill, if we leave out of consideration the slow constitution of the German contingent. Europe is depending, in case of need, to a decisive extent on American help. It is not recognized that the Soviet atomic armament is continually drawing nearer to the status of that of the United States. In this connection we call attention especially to the successful creation of intercontinental bombers and remote-controlled missiles which can be fired from submarines. As a result, the United States is more and more in the situation where atomic weapons could land within her own territory. This situation changes from year to year to the disadvantage of America.

The United States already is security conscious to the highest degree. In the case of an attack by atomic weapons, she naturally will have to put into execution her countermeasures on the basis of her defense. The defense of Europe, even against the Russian ground forces, may possibly play only a secondary role in America's concept. In any event, it will be very strongly influenced by it.

We must, however, not only think of a war between the United States and the Soviet Union, which as an atomic war

is intrinsically improbable. It is no less grave a matter to Europe if—after the attainment of an approximate armament balance between the two world states—the Soviet Union with only her traditional forces, *without the engagement of atomic weapons*, and without attacking the United States, attacks Europe.

In such a situation the questions present themselves: Will the restraints on the employment of tactical atomic weapons then be removed by the West? Will American aircraft begin the flight to the Soviet Union and will the US take upon herself the odium of having initiated the employment of atomic weapons? Is not the theory of deterrent, a product of US political and military thought, also valid in its effect on America? Will the United States accept the risk of inconceivable, enormous destruction on her own territory to bring help to Europe—a help which, in view of the one-sided American armament, can only be brought by the engagement of atomic weapons? Or will there be a tacit abstinence from the use of atomic weapons as was the case with chemical weapons? Will Europe then be able to think of defending with even the least chances of success?

These are very vital questions which decisively affect the defense of Europe and yet no one is able to answer them today.

### The Catastrophic Mistake

One point, however, is brought out by these questions with complete clarity: Neglect of traditional combat forces in Europe as a result of the theory of atomic warfare is a catastrophic mistake. All armament must take all eventualities into consideration. The Western Powers are concentrating, however, on pure atomic war—on a single possibility which, in addition, is based on an unproved theory which is subject to change as developments occur.

The idea of pure atomic warfare was adopted as an expediency for the purpose

of counterbalancing the West's shortage of ground combat forces. When we consider that with the growth of Soviet atomic power, importance must again be attached to the Russian superiority in ground forces, the only logical conclusion that can be drawn from this development is that the ground combat forces of the West eventually must be developed to the point where there will be some hope for success in a defensive war. Such a war is quite within the bounds of possibility.

The military power which the European states had developed before World War II was so great that today they could doubtless resist the greatly increased Soviet combat forces. What was possible then should also be possible today, especially since our very existence and freedom depend on it. If there existed an approximate balance between the traditional combat forces of both camps, the elimination of the atomic weapon also would be within the realm of possibility.

## Irregular Warfare

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THE development of intercontinental bombers carrying nuclear weapons has made global war more frightening and less likely. We are now on the threshold of an era in which long-range ballistic or guided missiles carrying atomic, hydrogen, or even cobalt bombs will enable the great powers, if they are so minded, to destroy each other within a few hours, and possibly to extinguish the greater part of the human race. The weapons now available are so immeasurably destructive that war can no longer be regarded as a practicable way of settling international disputes.

Clausewitz defined war as a "continuation of state policy by other means," but a continuation of policy that leads immediately and inevitably to national suicide is an absurdity—nor can there be winners and losers in such a war. The most that the "winner" can hope for is to be destroyed a few hours later than the "loser."

In these circumstances, we shall have to find other means of settling international disputes, since full-scale war has now, as Clausewitz prophesied that it would, reached the stage of employing the utmost violence and has become too severe to be of any practical use.

It would be expecting too much of hu-

man nature to suppose that the nations of the world, realizing this, will refrain from quarreling, or will seek to settle their differences by negotiation or arbitration. The United Nations, as presently constituted, cannot resolve international disputes or uphold international law. Although there undoubtedly will be an increasing tendency for nations to seek agreed solutions of many problems, they will still strive, whenever their vital interests are concerned, to gain their ends by forcible methods short of resorting to full-scale war.

The Soviets have already appreciated this, and they will rely in the future mainly on some form of irregular warfare, using the weapons of propaganda, political and economic penetration, internal subversion, civil war, and industrial sabotage to enable them to progress toward their avowed aim of dominating the world. They will employ overt aggression only in circumstances in which they believe that the conflict can be "localized."

This has been called the "cold war," and it is being prosecuted by the Communists as vigorously as ever, although since Stalin's death it has been accompanied by some improvement in Russian diplomatic

manners, and camouflaged by smiles and expressions of good will.

Although we are technically at peace with Soviet Russia and Red China, because our old-fashioned diplomacy recognizes only two formal states in international relations—peace and war—we are really the victims of an unceasing irregular warfare waged against us by the Communist bloc. Many of their actions are of such a hostile nature and so damaging to our vital interests that in the old days they would have been regarded as intolerable and would have led to full-scale war. Now that this ultimate sanction is, in practice, no longer available, it is necessary to find other means of ensuring our survival. We shall have to devote a great deal more thought and, if necessary, more money to the solution of this problem.

In the past our incursions into the field of irregular warfare have not been encouraging. This is mainly because we have employed it on the periphery of an offensive campaign overseas, as a psychological relief from the inexorable burden of conducting, in accordance with sound strategic principles, a long war which we entered unprepared and ill-equipped.

### History

Three examples at once come to mind. During the First World War T. E. Lawrence conducted a sporadic campaign on Allenby's right flank with Bedouin tribesmen of the Hedjaz and the Syrian desert. It was romantic and exciting, but there is no evidence that it shortened Allenby's campaign by a day, while it had political repercussions that have embarrassed our policy in the Middle East ever since.

Again, Wingate's attempt during the last war to operate behind the Japanese front in Burma weakened the regular forces available for the campaign, and imposed great losses and hardships on his own force without doing anything really effective. It is impossible not to believe that had the men—picked men, many of

them—remained in the Fourteenth Army, the Japanese would have been defeated more quickly.

The Commandos of World War II were allowed to draw off the best junior leaders—officers and noncommissioned officers—who were urgently needed to strengthen and train our armies after the defeat and material losses that culminated in the Dunkerque evacuation.

The combined operations that were carried out in 1941-43 against the coasts of France, the Low Countries, and Scandinavia were all failures and had no useful bearing on the conduct of the war except one—the seizure of German radar equipment from a coastal station at Bruneval which enabled us to discover the wavelength on which their defensive radar operated.

Irregular warfare, however, can be of great value when it is properly used as an adjunct to full-scale operations in suitable circumstances. The best example of this is to be found in the Soviet guerrilla warfare against the German occupation forces and lines of communication in Russia which reached its climax in the Crimea in 1942-43.

The twofold object of these guerrillas was to drain the German manpower so as to weaken their front, and to deprive them of arms, equipment, and supplies. The first object can be achieved by compelling the enemy to deploy his manpower to secure his rear areas, and the more numerous, daring, and widespread their exploits, the greater will be the success of the guerrilla bands.

The second object is achieved by attacking the enemy's lines of communication, by wrecking trains, setting up roadblocks and ambushing convoys, and by sabotaging equipment and supplies. Each individual band of guerrillas is self-contained, striking swiftly and withdrawing into cover or mingling with the civilian population. The Russian guerrillas seldom wore

uniform, unless it was German uniform, and they soon discovered that a thousand bands of 50 men each were better than 50 bands of a thousand.

The guerrillas relied for intelligence and for their supplies of food on their close contacts with the civil population. Their central organization was loose but effective; it gave broad directions as to the important targets which were selected and timed to aid the general conduct of the war as far as possible. The guerrillas relied mainly on the air for their supplies of weapons, ammunition, and technical equipment. They were elusive, ruthless, and observed no code of military conduct. They took no prisoners, and knew that if they fell into German hands they would be shot.

The operations of these guerrillas were tremendously effective, because all the factors needed for success were present—a vast territory including great forests and swamps, a plentiful supply of arms and ammunition, a population inspired by a fanatical hatred which the Germans had largely brought upon themselves, and long lines of communication passing through undeveloped country.

The irregular warfare conducted by the Yugoslavs also was successful for the same reasons. But our attempts to keep partisan warfare alive in occupied France and other western European countries were relatively unsuccessful because the right conditions did not exist. There was no regular warfare going on in western Europe, the German lines of communication were much less important than those in Russia, and the territory was too highly developed and covered with a network of roads and railways.

The "resistance" did little more than irritate a limited number of Germans, and it was unfortunately very profligate of the lives of brave men and women. By the time the invasion arrived in June 1944, when the existence of a large number of

well-trained and equipped partisans would have been most valuable, the great majority of those who could and would have helped us were dead or in German prisons.

It may be argued that our action in supporting the "resistance" had an intangible moral value, and while that may well be true I doubt if it was worth the price paid in lives and suffering. It would have been far better if we had built up a secret organization, designed to become active only when our return to the Continent was imminent.

Because we live in an island which has not been seriously invaded since 1066, we have no experience of the offensive aspect of guerrilla warfare; nor have we much experience of defense against guerrillas except during the last 10 years in Kenya, Malaya, and Cyprus. We are still inclined to think in terms of the Hague Convention on land warfare which sharply distinguishes between combatants and non-combatants, and assumes that the indigenous population are peaceful civilians.

We have much to learn from a study of the German antiguerrilla warfare in Russia and Yugoslavia—if only to learn what not to do—because we may be sure that in the future we shall have to deal with an increasing volume of Communist-inspired guerrilla activity in our colonial territories. And in any war against the Communist bloc—not necessarily only in full-scale war—we shall have to deal with guerrillas and saboteurs even in our own country. It will not be like the last war when we merely had to lock up a couple of hundred Fascists. We shall have to deal with thousands of Communists, British citizens owing allegiance to a hostile foreign power, and hundreds of thousands of deluded Communists and Nationalists in our Empire overseas.

It is chiefly these problems, and those of the "cold war," which will interest us for the next generation or so, and it is time that we began to think more seriously about them.

## The Offensive

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ACCORDING to Clausewitz, the object of an offensive strategy is the destruction of the forces of the adversary. On a tactical level this means an advancing movement against the resistance of the enemy to impose the attacker's will and power upon him. Within this general concept, it is the task of the small unit to advance and gain territory in the direction of the assigned objective. It is here that the use of the atomic weapon appears as an influence that might well change our accepted traditional ideas.

The offensive is essentially movement, maneuver, and coordinated fires put into action. The defense, however, is static, bound to the ground and the employment of combined fires. Movement and immobility are diametrically opposed, but the factor of fire is identic in nature.

It is necessary to eliminate the defensive fire by an offensive fire. The offensive fires, in power and effectiveness, must be superior to the defensive. This is not an objective in itself, but only a means, a necessary means, that allows movement after the fire of the defense is silenced.

An exact coordination between the fire and the movement is vitally necessary. This is the crucial problem of the offensive. Strategists have been looking for the ideal solution to this problem with more or less success ever since the range of fire so drastically modified basic tactical concepts.

Has the atomic weapon already caused, or will it cause, a revolution in the traditional methods of the offensive? Is the atomic weapon the "absolute" weapon solving the requirement for superior firepower? Will it replace the heavy support weapons of the traditional artillery? In other words, have we already witnessed

the emergence of a tactic entirely new in spirit and methods?

Recently, General Bésançon, Inspector General of the French Artillery, wrote the following judgment:

*The shell is the weapon of the artillery. Our artillery, therefore, can be content only if it has at its disposition a shell that will appropriately increase the effectiveness and force of its fire under modern conditions. The appearance of the atomic explosive does not change in the least the general missions that are the responsibility of the artillery.*

These words, coming from such an important pen, are thought-provoking. Here openly appears a tendency toward establishing continuity between the past and the future through the absorption of the new weapon by the artillery. Words like neutralization, counterbattery, interdiction, and direct support still will remain in common use. Nothing seems to have changed in methods or vocabulary. They are just conveniently applied to this new and incomparably powerful weapon, and that is all.

A closer look at this appears to be necessary.

### Deployment and Contact

In the past a methodical concentration of forces for an attack usually was made during daylight using several routes with units echeloned in depth.

The range limit of the artillery of the enemy permitted virtually free movement of forces except within close proximity to the battle position. But the introduction of airpower to the battlefield complicated this problem to an even greater extent, and the fact must now be accepted that

any target of sufficient density is worth an attack by missiles or planes with or without atom bombs.

Forming up for the attack in the traditional way has become "unthinkable." Larger units must double the area covered by the marching or attack formation, and extend their columns in order to disperse in consideration of the radius of effect of an atomic projectile. Even with such wide dispersion great losses will have to be expected. In most of the cases the solution adopted will be based mainly upon the one factor of "security."

It appears that traditional firepower still will be necessary to crush the small frontline enemy forces that will probably escape atomic fire, since the latter has to consider the safety of friendly troops. This brings us back to the old concept of contact. It is thus doubly necessary to stay in close contact with the enemy forces. This also facilitates obtaining an extensive and accurate picture of the enemy dispositions and determining in detail the different elements of his forces.

In the past a close contact was both necessary and realizable with traditional arms. It was necessary because the preparation (destruction or neutralization) demanded planning of the shift of fire concentrations from one target to another; and realizable because these fires of preparation required only relatively short and reduced safety distances. All in all, they left only a dangerous zone of about 300 yards that had to be crossed by the infantry with only the support of its own organic arms and tanks.

### Contact Today

Does the idea of contact accomplish the same thing today? This question is well worth discussion.

Technical evolution has developed new means of acquisition of intelligence. Among others are aerial photography at high altitudes, radar, and for the first time the battlefield application of television. The

latter eventually may be able to give a clear picture of the enemy positions even before the actual contact is established.

In case it has been decided to use atomic weapons for the attack, it will not be as necessary as it was in the past to know the details of defensive organization of the enemy. Not long ago it was necessary to knock the enemy out by successive and carefully planned concentrations according to a time schedule, but now we can count on the atomic weapon to destroy the entire defense position instantly. In principle, it should suffice to know more or less accurately the surface extensions of the latter. Then a point zero has to be determined in order to catch all essential elements in the zone of maximum effectiveness of the atomic burst.

This does not mean, however, that the reconnaissance loses its value. It is still just as vital as it is difficult.

Close contact also was necessary in order to remain informed about the effect of preparatory fires. The loss caused by these fires has not usually been too great. In the past, after some 10 minutes at most, the defense could again find its courage and reengage in combat; then, carefully controlled final protective fires could play havoc with the attack. This was the major reason why France retained, until 1940, the doctrine of combined tank and infantry employment to solve the problem of the "last 300 yards."

The events of 1940, however, produced a definite development on the German side with regard to closing with the enemy. The neutralizing action of *Stukas* and the mass employment of airborne troops at the positions of the Albert Canal facing Maastricht, for example, took the place of the frontal attack.

In other words, there was no systematic synchronization such as occurred in the traditional offensive. Another example is the World War II battle of the Meuse, even though different means were em-

ployed. There was never any contact between the attacking and defending forces in the successive positions of the Belgian Army that could compare with the norms used then.

If the concept of close contact is to be preserved, the attacking commander making use of atomic weapons always will be impeded by the necessity of providing safety for his forward echelon. If we take the medium bomb of 20 kilotons, for example, we have a radius of about a mile of maximum effectiveness around point zero. According to the opinion of different authors we might accept a safety range of between 1,000 to 2,000 yards, depending upon the weapon employed.

It is to the interest of the defense to push forward as close as possible against the attacking enemy before the expected attack occurs. This will avoid the employment of atomic weapons against the advanced operating defense forces and force the enemy to use the traditional means which will cause a fatal concentration of artillery and troops. These concentrations will then offer worthwhile targets to the atomic weapons of the defense.

In fact, both the offensive and defensive forces will attempt to retain this close contact. The usually contrary interests of defense and offense coincide in this important point. But this will not solve the complex tactical problems which will inevitably arise. Even if we should arrive at the conclusion that close contact will be replaced in the future by a loose contact there will still be some unanswered questions.

How is it possible to organize the necessary concentration of weapons and troops before the attack begins if the defense pushes up to and holds this close contact?

Will the atomic effects upon the support and resistance centers be sufficiently strong to permit making the assault in a time short enough to exploit the atomic neutralization?

What proportion of the defense will be knocked out of combat? Are those who remain able to take any part in the combat and if so, how effective will they be?

### The Offensive Operation

Once the contact has been established and the preliminary operations (reconnaissance, observation) are over, in the traditional attack the offensive operations normally include a phase of preparation, the advance to close contact, rupture of the defensive positions or an encircling movement, the exploitation phase, and eventually the pursuit.

The effect of atomic weapons upon these traditional phases can only be judged in a theoretical hypothesis of the probable defense potential of the enemy.

The Russian soldier, who has always been good at digging in, undoubtedly has been told that he would be able to survive in a trench at half or a quarter of the distance from point zero that would be deadly for any unprotected man. He knows that if he is even lightly covered, he will be protected against the light of the explosion as well as against the burns. A cover of six inches of earth will reduce the dangerous radiation to half, and 40 inches will reduce it to 99 percent of its effect.

Even if a major center of resistance should be very vulnerable to an atom bomb, a great number of its people will be able to escape the effects of such an atomic attack. The losses will vary with the location. The most authoritative estimates of such losses still remain secret, but the effects of the Hiroshima atomic weapon, both in terms of casualties and in the humanitarian struggle of the residents to survive it, are well-known.

Several articles written by Western authors, estimating losses ranging from 30 to 60 percent, have concluded that there would still be enough men left to defend the atomized territory. This does not give any credit to the shock effect on a human being

confronted with a "quantity of terror" released against him in a minimum of time. Only seldom does the reality of combat agree with the abstract conclusions arrived at in an office or a military instruction class.

It is quite possible that the Russian soldiers will react quite differently than expected. Several observers count among his weaknesses his moral vulnerability. This probably will become apparent if he is taken by surprise and forced into action under conditions unknown to him.

### Atomic Preparation

The problems of warfare before 1914 were of elementary simplicity. Nevertheless, the many discussions concerning them often arrived at erroneous conclusions. It is impossible in such discussions to come to decisions: the most that can be done is to establish a reasonable hypothesis.

It would be quite wrong to think, as we did a few years ago, that the atomic weapon would do away with all physical resistance at once. It is possible that the number of survivors already has been estimated on an experimental basis, but we know nothing about their psychological state after an atomic attack. From this point of view we will find different reactions according to the nature of the troops and the moral leadership of the local command.

However, it may be quite possible that after an atomic attack a defensive unit will lose all cohesion and unity. Fire control and communications will be destroyed, and the enemy very possibly dispersed into separate and isolated islands of defense. On the other hand, if the defense has made the mistake of overconcentrating the artillery and reserves, they run the risk of suffering more losses in this area than in the frontline units, and a quick diminution of combat capability.

Let us turn back to the moment of

preparation for the attack. There will be two choices: there is either close contact with the enemy according to traditional norms, or there is a zone of security between the advanced guard of the attacking troops and the enemy according to the power of the atomic weapon to be used.

In the first case the preparation against the known enemy locations of the defense area will follow the rules of traditional employment of artillery supported by the heavy weapons of the infantry. Toward the depth of the enemy position command posts, strongholds, keypoints, and concentrations of artillery will justify the use of new precision weapons (missiles) or mass destruction weapons (atom bombs).

The atom bomb employed against a center of support and resistance of the most forward line will not be very efficient in energy output because we can estimate that about 30 to 40 percent of its force will be expended in the security zone. It is by no means paradoxical to acknowledge the fact that an atomic attack will find its best targets among the artillery, the reserves, the command posts, and logistical installations. If this point of view is accepted, the first phase of the attack—the preparation—will employ traditional methods.

The old disposition of artillery and the old formations of the infantry and tanks have to be excluded in any case from the assault attack. According to our above admitted hypothesis, the power density and change of concentrations of the fires did not undergo more than minor changes except for a greater range and better accuracy. The dispersion of means will be the principal guiding rule.

It seems that the offensive as well as the defensive must always be prepared for immediate reaction to the demands of tactics either with or without the employment of atomic weapons. However, the determination of what reactions are neces-

sary is easier than the discovery of practicable methods of accomplishing them. All in all it will be necessary to find a formation for the attack that does not concentrate more than small bodies of troops at a time, and thus offers no worthwhile targets for an atomic attack. On the other hand, this small unit must be capable of developing a coordinated fire of maximum intensity at any time.

### The Offensive Formation

First of all let us look at the infantry. Its advanced elements will have to be held in more or less close contact with the enemy. For this purpose a loosely linked formation will be needed, a formation so dispersed as to not attract the atomic fire of the enemy. Behind the front the formations of different arms are more widely dispersed than they were in the past.

Consider an army corps of four divisions, one of them a tank division, with two infantry divisions in the first echelon on a total front of 10 to 24 miles with a depth of up to 30 miles. Before the two forward infantry divisions go into action the difficult problem of how to assemble their elements within the last hours before the attack begins must be solved. This has to be done without arousing the attention of the enemy, within the assigned limits, and in front of the desired objective in the necessary concentration, but in a concentration that will show less density than in the past.

On a quite different level it remains the same problem of earlier times—the problem of traditional formation of units marching in columns and coming from several sections spread out in depth and width over the territory. But now we will have movements at night, and generally without the use of the frequently employed transportation means of the past.

It will be impossible to destroy all the enemy strong points with atomic weapons. It would be foolish to believe this or

to base any action on it. The atomic targets have to be selected very carefully. The strongest positions have to be given preference. After this discrimination, which will require an efficient reconnaissance service, other targets will remain that require only a preparation by traditional weapons. Even at the very site of the atomic explosion there will probably be some dispersed elements left that will have to be taken care of by traditional weapons.

If their mission has been fulfilled with traditional weapons and movements we encounter a problem already familiar to us. If atomic weapons have been used it is probable (at the present state of development) that the defensive positions will consist of some regions without any effective resistance at all, together with strong points still held by the enemy, and other zones that will have to be avoided or bypassed because of the residual nuclear contamination.

The situation has changed considerably since the days of the accepted principle that a unit should not alter its objective or direction of attack once it has been committed. After a "mixed" preparation, it will be difficult to determine which enemy position has been neutralized and which still can resist in what remains of the defense position. Only a commander who is present on the spot will be able to launch a maneuver that takes the conditions of the moment into account in the exploitation of zones that are neither contaminated nor knocked out.

The arrival of atomic weapons on the battle scene has caused a modification in the tactics involving classical weapons (artillery, machineguns, and tanks), and with the new weapons, new tactical maneuvers must be developed. It would seem that only a single type organization of combat units, capable of fighting either with or without atomic weapons, can fulfill these requirements.

### Exploitation

A defensive position will be much deeper than in the past. Therefore, the offensive has to push much farther in order to accomplish a breakthrough. During this operation the conditions of air supremacy, atomic superiority, at least local, superior mobility and firepower, and dispersion, are prerequisites.

The rhythm of the battle has been determined up to this point by the foot soldier of the infantry in reducing the enemy resistance areas left more or less unharmed by the traditional or atomic fires. This rhythm will be accelerated when the infantry reaches "open" territory.

In the case of an offensive carried out with traditional weapons, the operations in general remain the same as in the past. If atomic reaction might be expected from the defense, however, the rule of dispersion has to be observed at all times during the critical penetration stage of the operation.

If after an atomic attack some local resistance positions should still be held by the enemy, the tanks will move against them in conjunction with the infantry. The dispersion of the infantry in this operation will also have to be greater than in the past.

However, the tanks are most effectively used in the exploitation itself. This is nothing new. The breach will not be very large if it was obtained by the traditional combination of artillery fire and infantry maneuver. It will probably become larger with the employment of tactical atomic weapons. The possibility and temptation of the hard-pressed enemy to use his most powerful weapons in order to destroy the tank menace as it concentrates to pass through the gap must always be taken into consideration, especially if such concentration has been avoided until then.

All conceivable tactic hypotheses lead us to a modern war of movement. Against

the tank formations exploiting a penetration the enemy might send his tanks from the sides of the breakthrough zone in a counterattack. He might disturb their advance with the help of one or several resistance lines, or even combine the two actions.

In this stage, frequent employment of atomic weapons is to be expected as the attacking force attempts to gain a final decision. His efforts may be concentrated upon either specific and well-known targets or on whole zones, but always in close cooperation with the maneuvers of exploitation, pursuit, or retreat. In all cases a considerable waste of atomic energy may be expected but will hardly count if the mission is fulfilled successfully.

Close coordination of action between the tank formations and the airborne units that have landed in the rear of the enemy, and sometimes even with partisans, will be necessary.

Different combinations of these means and tactics result in a variety of actions, but they must all have one common principle. They must all avoid any formation that might justify the employment of atomic weapons. That is the reason for the systematic efforts to attain greater and wider dispersion of the units, even though it is known that there are definite limitations imposed by the presence of the empty spaces in the formation.

Until now lateral and frontal limits were of main concern. Although they may, in the future, have to be neglected to accomplish dispersion in an attack formation, they will still have their effect on both the infantry and the tank divisions. They determine the initial action of the major unit, but the existence of empty spaces will soon give them a new flexibility. The fact that it will be necessary to develop more freedom within those limits, and sometimes even to forget about them altogether, is inescapable.

## Against an Army of Mercenaries

Digested by the MILITARY REVIEW from an article by Lieutenant Colonel A. Green in the "Australian Army Journal" March 1957.

IT IS no surprise that two such eminent pioneer exponents of tank warfare as General Charles A. de Gaulle and General Sir Giffard Martel have been the most vocative proponents of the elite long-service professional army of our times. General de Gaulle, in his forthright *Vers l'Armee de Metier*, primarily was concerned with French conditions and needs before World War II; and Sir Giffard Martel, in his postwar writings, has naturally directed his theories toward a solution of purely British military problems, particularly British commitments on the Continent of Europe.

It is now quite clear that a similar school of thought is emerging from among some of the most thoughtful and experienced Australian staff corps officers. They feel that a compact, well-trained, and well-equipped professional army would be more appropriate for the fulfillment of Australian defense obligations than the existing larger Australian Military Forces, compounded as they are of small regular units and cadres with large complements of Reserves and National Servicemen.

It would, of course, be unreasonable and disappointing to expect professional soldiers to prefer amateurs or conscripts were there any simple choice. Regular officers, by their upbringing and tradition, are unremitting perfectionists, and the achievement of their technical aspirations is greatly facilitated by a long-service professional army. Unfortunately for them, under Australian economic and political conditions, the choice is not a simple one, and their proposal requires the most careful examination to determine whether it is valid, wholly or partly.

### Conscripted Armies

It is accepted generally that the growth of great conscript armies, a European and American development, was facilitated by the industrial revolutions of the last century and the resultant improved capacity for equipping and moving such armies. Citizen obligations to serve in time of war had existed in law since feudal times, but only with the support of 19th century factories and railways could entire national populations be utilized in war. At the same time, improved political and administrative machinery rendered the system effective.

It was fortunate also that the handling of the earlier weapons produced by the factory system, principally the rifle and bayonet, were adequately, if not superlatively, mastered by conscript soldiers serving for two or three years. Artillery presented certain difficulties and doubtless the device of the preferential assignment of the better men to artillery units compensated for this deficiency.

It is noteworthy that, although there was some press-ganging, British armies from the Napoleonic Wars until halfway through World War I, remained basically voluntary since Britain was predominantly a naval power. Hence the thesis that one volunteer is worth three, four, or six conscripts, depending upon the mood of the expert: from which it might also be deduced, in parenthesis, that one regular long-service man was worth say two last-minute volunteers.

The great battles in France and Flanders and static lines of defense played havoc with the equations of military quality, and forced most of the armies engaged there to resort to conscription.

One of the notable exceptions was, of course, Australia, whose referenda on the conscription issue constitute a precedent which no thinking soldier or politician can ignore. Nevertheless, we see a fairly constant tradition of the volunteer standing army, backed by volunteers and territorials (Commonwealth Military Forces in Australia, or nonpermanent Active Militia in Canada).

As soon as World War I ended, the old British Regular Army was revived, and conscription was only reintroduced when Hitler's war was inevitable. The French remained true to their conscript tradition, but the Germans were temporarily forced to maintain a restricted professional army of 100,000. Having derived great refinement of quality from this Reichswehr, the Germans reverted to large-scale conscription after the assumption of power by Hitler.

### Trend to Professionalism

At this stage the more advanced soldiers, notably J. F. C. Fuller in England and Charles de Gaulle in France, conceived a new ideal of smaller, yet more powerful, armies of great mobility manned by technical military experts. This need came about because the armament industry had developed equipment and weapons of such power and complexity that lesser numbers of more intelligent and better-trained soldiers were required to produce a given volume of fire in a much more mobile form.

The instruments of this policy—the airplane, the tank, the machinegun, and the vehicle—were more expensive than the rifle, bayonet, and ammunition boots on which the soldier had relied principally. The new forces, maneuvering across the land like naval fleets at sea, would render entrenched infantry and horse-drawn transport completely obsolete. The great nations-in-arms, according to these theorists, could no longer

be effectively deployed and maneuvered.

On the other hand, the mechanized armies would demand the finest human material, intensively trained and hardened for prompt dynamic employment. There is no doubt that much of their prognostication came true in World War II. The effective battle-winning elements of the German Army were the mechanized forces which cut through the old-fashioned armies of Poland, France, and initially, Russia, with convincing ease. However, probably of necessity, the conversion was not complete, and the German and Russian Armies notably retained a numerical preponderance of slower and more primitive formations until the end of the war.

Since that war ended the British preoccupation with hot and cold war and imperial policing has proved costly in men and material. The arguments of General Martel in favor of a regular force to provide the British contribution to NATO and imperial garrisons appeal to the soldier and civilian alike. Peacetime conscription is foreign to British tradition and inimical to the economic body as well as to the career of the individual civilian.

If a sufficient force of professional soldiers could be found for the task of the British Army apparently everybody would be pleased: but that happy state has not proved attainable.

### Defects of the Conscript

It is relevant to consider the principal objections of the professional soldier to the general mass of conscript soldiers. It is a common allegation that, because the conscripts are enlisted compulsorily, they are necessarily unwilling. This was certainly true at certain periods in the French and the Italian Armies, and even in the German Army, if we are to believe a certain type of war novelist.

It is hard to define all the factors that

must exist before one volunteer becomes the putative equal of two, three, or six conscripts. Much depends on national tradition, morale, and the political and military handling of the conscript. The Prussians were effective conscripts. It must, however, be conceded that a volunteer generally will display more enthusiasm for the task than the conscript; indeed, by the act of volunteering he has already done so.

Another drawback suffered by a conscript force is that almost inevitably, despite modern selection procedures, it must contain a definite proportion of inapt soldiers. They may be physically fit and, officially, mentally sound, and yet prove misfits. As they must be placed in units they have a disproportionately bad influence on other soldiers. Above all, the greatest defect of the conscript in the eyes of the career officer is the inadequate time available for his training and subsequent integration into his unit.

Normally, the system can only allow time for a concentrated and mass-producing recruit training, whereas that most important phase of the trained soldier's maturing—the welding into the unit and subunit team, and the production of good noncommissioned officers and unit specialists—has to be a hurried affair. It is equally deplored that the great numbers of partially trained soldiers produced by universal training cannot always be fully equipped by modern standards. Technical ingenuity may, in time, overcome this handicap by such devices as the Sten submachinegun and the recoilless field gun, which are the products of lighter, rather than heavier, industry.

It is pertinent to note that these objections to the *levée en masse* are essentially those voiced by modern Western soldiers who base their thinking upon the attainment of maximum firepower and mobility, and, being responsible to

democratic institutions, must exercise every economy in human life. They do not apply to those Asian and totalitarian armies which subscribe to the doctrine of saturating the defense in "human sea" tactics, although neither can they totally escape the influence of such progressive ideas.

Exchange of military thought is not subject to national frontiers or customs barriers. The Finns taught the Russians the finer points of winter warfare around Lake Ladoga in 1940, and the Russians were soon busy teaching the Germans the same lessons during the winter of 1941. It cannot be assumed that the adverse moral effects of conscription upon the Anglo-Saxon youth will be equally apparent in the young Muscovite who has been reared in a totally different domestic and intellectual environment.

#### Virtues of Conscription

Powerful influences were needed to force the entire Anglo-Saxon world to conscript its manpower for war and cold war. Therefore, there must be some virtues in the system in the present context. Probably the greatest and most obvious of these is the elementary justice of imposing the grave burdens of defense equally over all sections of the population. Two generations have seen the most morally and physically fit of the nation go forth voluntarily to successive decimations. Nations can afford neither the initial loss of such cadres nor the subsequent rancor engendered by unequal sacrifice, no more than industry and good administration can withstand the unnecessary dislocations of a voluntary system.

The second virtue is, therefore, the ability of the system to apportion the aptitudes and skills of the nation in priority of war tasks, provided an efficient system of personnel selection, allot-

ment, and industrial mobilization exists. It is also important that, so long as our sturdy democracy functions, the conscripted soldier is serving, not at the behest of the military hierarchy or the politicians, but of the voter—himself. This is in itself a great safeguard of his freedom and interests.

From the purely military point of view the system commends itself because it is, under present conditions, the only means of producing forces of the required strength and, equally important, the reserves for those forces. Thus during World War II the British Commonwealth nations and the United States had to resort to these methods, and, in some form, they have retained the system during the current uneasy peace. At the same time, it is incontestable that the French armies—badly launched, ill-found, and nurtured in the school of static defensive doctrine—proved singularly unsuccessful in 1940, and a very poor argument for the system of conscription.

There has been much criticism by prewar regular officers of the postwar National Servicemen in the British Army; but impartial critics of these troops in Malaya and Korea consider that in many cases they compare more than favorably with the prewar British regular soldier, particularly in intelligence and keenness.

### The Forces We Need

The defense problems and the manpower difficulties of Australia are not generally analogous to those of Great Britain, Canada, or the United States. Isolated, and adjacent to southeast Asia, Australian attention is focused on immediate local threats of real urgency in a vast and absorptive terrain. Her internal development makes a great demand on the available labor force. The quantity and quality remaining for all the defense forces normally is inadequate, and

every resource must be carefully harbored.

Britain and the United States are highly developed and populous territories. Even Canada—of comparable area to Australia, but comfortably contiguous with the United States and more remote from all but the transpolar threat—is better populated than Australia. Moreover, Canadian and British defense in the North Atlantic is integrated fully with that of the major partner. Such integration and such allies are not so easy to achieve in the southwest Pacific or in southeast Asia.

Australian policy during the past 10 years has required balanced forces of all three services; regular components being permanently available for occupation of enemy territory, and cooperation in UN, ANZUS, ANZAM, and SEATO. Thus by various devices a total of all regular services of about 50,000 has been maintained more or less constantly. These forces actually constitute only the cold war and token forces. Behind them are the more basic defense forces, mainly of the army, required to be available for full-scale warfare, and consisting of a combination of volunteer citizen elements with the bulk of rank and file being found from National Servicemen.

It is certain that without National Service the present force of approximately three divisions could not be kept in being at full strength. Moreover, in view of the critical time factor of modern war, which may be accentuated by the confusion of nuclear warfare, it is accepted that there is unlikely to be a year of respite for training and deployment such as the Australian Imperial Forces was given in World War II. Therefore, two criteria are important in the consideration of the type of army we need: first, what is the size of force required, and second, by what system can we

achieve the requisite quality and efficiency in that force?

In the worst case, the Australian Military Forces could, in global emergency, be called upon to operate practically alone, with perhaps only a division from Great Britain or the United States co-operating for a limited period. As the nearest force to southeast Asia it could be expected to provide the command and services for the force. In such circumstances a force less than a corps of three divisions is unthinkable. Meanwhile, there is a constant role for at least one brigade, such as was positioned in Japan and later in Korea, for early deployment which must be held in immediate readiness.

Moreover, in this nuclear age a local home and civil defense force comprising coastal, antiaircraft, and heavy rescue units about the equivalent of at least another division is necessary. By these calculations the existing Australian Regular Army and Commonwealth Military Forces are not excessive; in fact, they probably are insufficient. Furthermore, the tropical theaters in which we are most likely to operate demand full and fit cadres with a high proportion of similar reinforcement units. All must be immediately available for service, not in the military chrysalis stage, or as paragraphs in the mobilization handbooks, but in solid flesh and blood.

It may be contended that such forces are beyond Australian resources of manpower and material. In war it is considered feasible to produce at least one divisional slice of about 50,000 all arms, as well as naval and air components, from each million of the population. The Russians, with smaller establishments and relying on more primitive yet effective logistics, could double or even triple that number of divisions. The internal needs of the vast territory of the Australian Commonwealth must absorb

a higher proportion of population than the civilian economies of the United Kingdom or the United States. Making allowance for this, and the naval and air force share of manpower, four divisional slices in peacetime from a population of nine million seems a feasible, although not an easy, target to reach provided the electorate recognizes the validity of the armed forces' demands.

### Comparison of Methods

Few will dispute the necessity for these forces, but there rarely will be agreement on the best method for obtaining them. The main choices before us are by:

1. Regular enlistments, that is, Australian Regular Army.
2. Voluntary citizen service—Commonwealth Military Forces.
3. National Service training of limited duration.
4. Selective Service on the lines adopted in the United States.

The regular army, in whole units and formations, is a recent growth in Australia that has established itself rapidly in public esteem. Most of the credit for this success must go to army schools which have accomplished the transformation from the interim army.

The old elite cadres of the prewar staff and instructional corps were more limited in scope than the Australian Regular Army and had less impact on national life. They achieved the highest quality by selective recruitment and training. They were held in the highest regard professionally by other British Commonwealth armies, and are still bearing excellent fruit to this day.

Regular forces are the logical instruments for the formation of instructional cadres, staffs, and overseas garrisons. Nevertheless, it is clear that an Australia whose amazing economic development can only be compared with that of the United States in the 1860's can produce only a limited number of regular army recruits.

This experience is a close parallel to that of the United States Navy and Army during the latter half of the 19th century, when the regular forces faced insuperable recruiting difficulties but managed to keep a strong and effective cadre of staff officers in being against the emergency of major war. Civilian employment is too competitive for the services in Australia. In regard to some of the manpower presently recruited, it seems unlikely that even a doubling of the Australian Army pay could double the strength and maintain the quality of the Australian Regular Army.

The necessity to accept some substandard recruits in a mercenary army was well-known in the old British Army, and is becoming more familiar to the Australian Regular Army. Canada contrives to maintain a divisional slice of regular soldiers in being, including two brigades overseas at one time, and apparently has not, despite her greater population and prosperity, found it easy. It is probable that the Australian Regular Army now is at the maximum strength feasible.

The volunteer traditions of Australia are well-exemplified in the Sudan, the Boer War, and the two World Wars. There also is a willingness to accept conscription in approved circumstances. Before World War I Australia was the first British nation to introduce compulsory training, and has twice repeated the process in peace since then. It might be said that the tradition is broadly one of compulsion for training and for wars threatening the mainland, and of volunteering for imperial wars.

The volunteer has the valuable quality of enthusiasm, which is to the soldier what charity is to the soul—an indispensable leavening. He is naturally the easiest man to train because he wants to train himself. Added to this, citizen units attract the cream of civilian talent from a broad selection of professions and trades. Australian military tradition draws heav-

ily on the achievements of these fore-runners, from Monash to Morshead, and their mark is conspicuous on Australian public life, as well as in military affairs.

Unfortunately, the wholly voluntary Commonwealth Military Forces can never produce the number of soldiers needed, at the time required, for modern war. This shortcoming is accentuated by the stress of modern professional and business life. The good, mature man whom the army requires as an officer or noncommissioned officer is likely to be entering the most demanding phase of his vocational and domestic life. He cannot spare much time or energy for the army. Governments have always sought the maximum support from citizen forces, primarily because they are cheap, and partly because they are regarded as politically innocuous.

There arises now some doubt of the degree of technical perfection, in such units as armor or electrical and mechanical engineers, which can be expected from Commonwealth Military Forces units, although they have hitherto been notably strong in field engineering. Over-all it cannot be immediately expected that such units will ever be up to a war establishment with fully trained soldiers.

There is reason to believe that only small specialist elements or individuals can achieve complete readiness for war under the voluntary citizen system; thus, although we are not informed of the proportion of citizen pilots who fought so successfully in the Battle of Britain, we do know, from the number of auxiliary air force units on the Royal Air Force order of battle and the intake of volunteer reserve pilots up to that time, that a high proportion of that *corps d'élite* was nonregular.

There are many indispensable specialists such as doctors, dentists, petroleum engineers, and radio and radar technicians who are best recruited from civilian counterparts. Moreover, in an individualistic outdoor-loving people like the Aus-

tralian, the proportion of natural soldiers is high but not so high as to dispense with training as some propagandists imagine.

We cannot afford to ignore the Commonwealth Military Forces as a source of military strength; but, unfortunately, we can no longer rely on it for the bulk of our force. In home defense it might produce most valuable and effective forces similar to the Boer commandos or Home Guards, but for immediate global employment a definite standard of organization, training, and reinforcements must be imposed. In the Australian Military Forces the role of the Commonwealth Military Forces is comparable to that of the Australian Regular Army in the quality it contributes, and in the limitations of its numerical strength. Moreover, the Australian Military Forces must continue to draw the majority of their officers from these dedicated amateurs.

National Service was the deliberate declared will of the Australian people, and fortunately has been acclaimed as generally successful by the public. There is sometimes a suspicion that this public success is based more on the social than on the military effects of the training. In an era of endemic adolescent delinquency, service training plays an important part in orienting, disciplining, and educating our youth. This can only be a byproduct, and soldiers must also be satisfied with its military efficacy.

Fourteen weeks' total training in depots compares unfavorably with the 16 weeks' recruit training once deemed necessary in simpler times before a regular soldier joined his unit. Training methods have improved and with increased unit training in National Service battalions, the trainee reaches a remarkably good standard of general and unit training. Subsequently, his two annual camps and his home training refresh and continue his teaching, but it must be emphasized that they are not sufficient to bring him to

that standard required, individually and collectively, of an expeditionary force unit.

At the same time the Australian Military Forces seem able to accomplish more with their trainees than the Royal Australian Air Force, which does not appear to integrate the trainees into squadron establishments. The air force is apparently training large numbers of its quota in airfield defense duties which could well be undertaken by soldiers. It is this failure to reach a fully proficient state in units which dismays many critics of the existing system. They find, after experience in Korea and Malaya or from exchange duty in NATO formations, that the statutory period of training is not sufficient to produce a battleworthy unit and formation. The gunner who is barely beyond the trained recruit stage, the driver who can drive but cannot maintain his vehicle, and the weak junior infantry leader—all bespeak an army unfit to take the field immediately under modern conditions.

Moreover, the critic believes that many trained soldiers will never be available in war either because, under existing legislation, they will not volunteer to serve overseas or because they work in essential civilian occupations likely to be reserved. Therefore, the critic sees the National Service scheme as a qualified success; which is both militarily slightly wasteful, and falls short of the desired standards of military proficiency.

The fourth system of raising armies that is open to us is Selective Service, similar to the American practice. Under this system, when the eligible civilians exceed the number of recruits needed, the necessary conscripts are obtained by selection and subsequent lottery. This system has two great advantages: it has an element of fairness so long as the lottery is properly conducted; and, it brings in only as many recruits as the service requires. Politically it is disliked because it

ultimately leads to uneven acceptance of the defense obligation.

Nevertheless, it is an effective instrument to raise the forces to predetermined strengths with manpower of specified qualities. It is believed that if this system were used in conjunction with a longer period of service, a field force of the right size and correct quality could be ensured for the Australian Military Forces. Therefore, this system should not be rejected despite political objections.

### A Plan

It has been shown that the Australian Military Forces require three main categories of formation: standing garrisons and overseas contributions in peace; field forces for war; and home and civil defense forces for war. It then follows that these forces could be effectively manned in the following manner:

1. Regular components must be raised, either as units or cadres, in all three categories of force. Nevertheless, from the demographic reasons given earlier, the bulk of soldiers must be found from other sources.

2. Volunteer Commonwealth Military Forces soldiers should be employed in field forces whenever they are available at the field force standard; otherwise, they should be made available for home and civil defense units.

3. Selective servicemen will then provide the balance of soldiers required in field force units. After extensive training, from one to two years, in formed units and formations, their technical and tactical training will be complete, junior leaders can be selected and seasoned, and the mobilization process accordingly simplified. Two years in units may sound a long time, but, in fact, may barely suffice. Refresher training in an active reserve

will be necessary for them after they leave their units to maintain them in fitness for reinforcement. Selective servicemen would also be available for overseas garrisons and forces in peace.

4. The remaining fit males should be given compulsory home service training over a period of five to six years in home and civil defense units of the Commonwealth Military Forces.

5. Deferments should be given to specialists such as medical students, engineers, and electronic workers to enable them to be called up as fully skilled men and to take their appropriate places in establishments, which would benefit the armed services and the civilian populace equally. This measure, coupled with Selective Service, would be a great improvement in manning the navy and air force which seem to find difficulty in employing their present quotas of unskilled National Service trainees.

This proposal would meet the legitimate desire for a regular army which the reformers express. It would not, of course, be a wholly professional army. It might be unpopular with some politicians but it will be found correct in the ultimate verdict of history.

The perfectionists, whether in France, Britain, or Australia, who have sought their ideal in a professional army, confuse the means with the end. The means may be several, according to the circumstances and the country, but the end is one—to produce a battleworthy army. Our best war material, to paraphrase the late Marshal Werner von Blomberg speaking to Field Marshal William Ironside, is that produced by the mothers of our nation. Who can doubt that that material, intelligently and purposefully prepared, will play its part irrespective of what we call the system?

## Mutual Security Planning by the American Republics

Digested by the MILITARY REVIEW from a report prepared by the Inter-American Defense Board.

THE Inter-American Defense Board, as a symbol of Western Hemisphere solidarity and as an agency of Western Hemisphere Defense, is a somewhat silent partner in the maintenance of world peace—silent at least as far as the daily press is concerned. The concentration of public attention at the current focal points of East-West contacts in Europe, Africa, and Asia is quite natural. The contribution of the "silent partner" to the ultimate democratic goal of peace and security is, however, no less significant.

The roots of the Inter-American Defense Board reach far back into the history and have their origin in the many struggles for freedom in the Western Hemisphere. These roots antedate all of the "grand alliances" which seem to be occupying the center of the stage in popular attention today.

The development of solidarity among the 21 American Republics was a natural outgrowth of the indomitable spirit of the great leaders who made possible the independence of those republics. After having achieved freedom from colonial servitude, they turned their thoughts toward winning international respect and consideration. They took positive steps to forge bonds among themselves to assure the continuation of their newly won liberty and individual sovereignty.

Inter-American cooperation was manifested for the first time in 1826 when Simón Bolívar, the great liberator, convoked the first meeting of representatives of the young American countries at the Congress of Panama. It was not, however, until 1889 that the "International Union of American Republics" was created in Washington. This was the forerunner of the Pan American Union and of the Or-

ganization of American States, which, in turn, spawned the military agency of today, the *Junta Interamericana de Defensa*.

In the early days of Western Hemisphere collaboration, the problems were fundamentally economic. In a military sense we rested securely behind the natural barriers of two great oceans, buttressed as they were by the Monroe Doctrine and its announced divorcement from the conflicts of the Old World. Consequently, the requirement for close military collaboration did not exist, primarily because there was no immediate or foreseeable threat to our individual or collective security.

As the war clouds gathered in the 1930's, however, it was evident to all that the so-called "advances" of civilization prevented a likely conflict from being confined to the Continent of Europe. Modern warfare required more than men and rifles. It required a more extensive base of raw materials, industrial capacity, and political support. It followed, then, that the belligerent parties would seek the recognition and collaboration of the world's uncommitted balance.

When war finally began in 1939, the vast potentials of the Western Hemisphere as a source of urgent supplies became increasingly obvious. The American nations were faced with a choice of ideologies. They had to choose a course of action which would guarantee for them the liberties their ancestors had struggled so hard to achieve. They had to make their decision realistically and then undertake steps to ensure the validity of this decision.

In July 1940 the Foreign Ministers of the American Republics, meeting in Ha-

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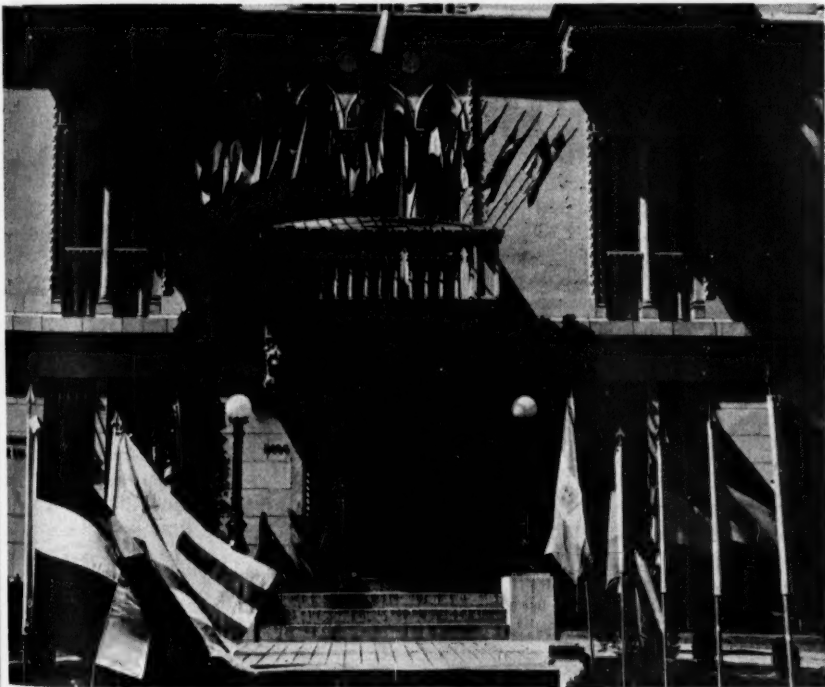
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vans, declared that an attack by a non-American state against any American state would be considered an attack against all the signatory nations. This first wartime decision pledged all to a common objective and announced to the world that the hemisphere must be regarded as an entity by any aggressor. Then, as a result of the Japanese attack on Pearl Harbor

ernments to study and to recommend to them the measures necessary for the defense of the continent.

Thus was born the Inter-American Defense Board which held its inaugural session in the Pan American Union Building in Washington, D. C., on 30 March 1942.

The appointed delegates of the 21 American Republics were organized as a



The home of the Inter-American Defense Board in Washington, D. C.

in 1941, the Foreign Ministers met at Rio de Janeiro in January 1942 and drafted agreements now generally referred to as the "Rio Treaty." Among their recommendations to their respective governments was:

*... the immediate meeting in Washington of a commission of military and naval technicians appointed by each of the gov-*

board on democratic principles. Each national delegation was treated as a unit whose size and composition was determined by the government it represented. Decisions were to be made by majority vote, each delegation being entitled to one vote, with no provision for a veto.

During the years of World War II the board made recommendations on such

subjects as the elimination of clandestine telecommunication stations, procedures to facilitate the transit of military aircraft, security against sabotage, production of strategic materials, naval and airbases, antisubmarine defense, and standardization (of matériel, training, and organization) and utilization of manpower. By the end of the war the Inter-

tary collaboration was firmly laid.

An inter-American conference met in Mexico City in 1945 to evaluate the work done by the board and to plan its future. The delegates recognized the board's value as an international agency. They resolved that the board as then constituted should continue its functions until a permanent agency should be established.



The 21 sovereign nations of the Inter-American Defense Board combine efforts for the common goal of mutual defense

American Defense Board had established itself as a valuable agency for coordinating defense measures and as focal point for the interchange of ideas on hemispheric military matters. Except for submarine warfare conducted in its coastal waters, the American Continent was never threatened by the ravages of war. However, the groundwork for full-scale mili-

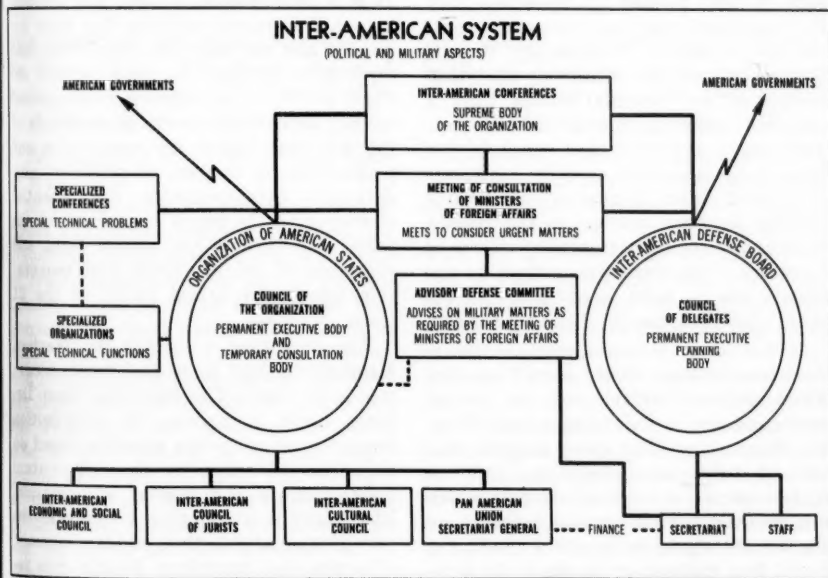
At a conference held in Bogotá in 1948 the Organization of American States was created with a charter in harmony with that of the United Nations. The Organization of American States' charter provided that the Inter-American Defense Board should continue to act as the organ of preparation for collective defense against aggression. The participating nations agreed

that the board would undertake to develop plans for the security of the hemisphere in addition to continuing its role as a collective advisory body.

The next step in expanding the mission of the Inter-American Defense Board was taken at the Fourth Meeting of Consultation of Ministers of Foreign Affairs held in Washington in April 1951. Meeting "because of the need for prompt action by the republics of this hemisphere

planning. Recognizing the ever-changing developments in modern warfare, the board is constantly projecting its thoughts so as to maintain balance with reality and the task the board has accomplished in this field is vital to the security of every American country.

In its present organization the board consists of a Council of Delegates, a Technical Staff, and a Secretariat. The senior position is that of Chairman of the



for common defense against the aggressive activities of international communism" the ministers drafted a resolution of Inter-American Military Cooperation and charged the Inter-American Defense Board with preparing and keeping up to date the military planning for the common defense. Plans formulated by the board were to be submitted to the several governments for their consideration and decision. Since that time the board has carried on its work in the field of progressive

Council of Delegates. The Regulations of the Board require that the chairman be "an officer of the Armed Forces of the country in which the board functions." The chairman is assisted by a vice chairman who, by regulation, must be of a nation other than that of the chairman.

The board operates on a modest budget. Its funds are provided by the Organization of American States to which all the member nations contribute in accordance with an equitable formula. Like all mod-

ern military establishments, it is constantly plagued by problems of economy. It is constantly fighting the battle of "maximum output at minimum cost."

As indicated earlier, the free nations of the Western Hemisphere have never before been subject to a threat from abroad to the extent which world communism is threatening today. Because of the often insidious nature of the threat there has been a reluctance or an inability on the part of some peoples to appreciate fully its true significance and the requirements for counteraction. Fortunately though, the broadminded and objectively analytical leaders of the member nations have a complete understanding of the dangers. They have reflected their concern for these dangers as well as their confidence in a board as an instrument of collective security by their interest in the board's work and in their assignment of officers to represent their respective nations in the council and to serve as members of the board's International Staff and Secretariat.

It was never intended that the Inter-American Defense Board should exercise direct detailed control over the armed forces engaged in the defense of the Western Hemisphere. The many complex factors of hemisphere geography and the diverse nature of the direct threats which are involved have a marked influence on the board's organization. As a result, the board has deliberately confined its technical and professional activities to the broad principles of hemispheric defense with emphasis on standardization of doctrine, training, and organization to the extent that the common purpose can best be served. The detailed planning is considered to be a unilateral or regional function within the broad framework of the board's coordinating role. The passage of time, reflecting as it does the tremendous progress being made in the field of military development, has given an increased tempo to the board's activity and to the

significance of the board's actions. Intensification of the board's planning role is evident on all sides. Similarly, the increased requirement for the formulation of detailed subsidiary plans on an integrated basis is encouraging the investigation and development of improved military defense measures throughout the hemisphere.

In summary, it can be said that the board is the natural product of evolution. It is a development of time and circumstance. Its original mission has been expanded and the internal organization has undergone changes. In 1949 it was defined as "... a military international agency, subordinate to the governments of the American states, for consultation and preparation in matters of collective self-defense." Fundamentally, the essential character of the board has remained the same. The keynote has always been, and continues to be, solidarity and cooperation among the armed forces of the 21 sister republics.

For more than a century the Western Hemisphere has been the most secure region on earth. The Inter-American Defense Board is making its contribution toward preserving this security, based on principles of solidarity through mutual understanding and mutual appreciation. The board is attempting to provide the coordination of objectives and the harmony of action that transform dreams into realities.

But above all else, the Inter-American Defense Board is a school of continental good will. It is a melting pot where technical knowledge and traditional concepts are fused for the common good. It is an organization in which the military men of the continent learn to understand one another, to work together, and to devote themselves to the achievement of the ideal of a modern New World, confident of its peaceful and orderly development in an atmosphere of collective security.

# BOOKS OF INTEREST TO THE MILITARY READER

## THE EMPEROR CHARLES THE FIFTH.

By Royall Tyler. 375 Pages. Essential Books, Inc., Fair Lawn, New Jersey. \$7.50.

By MAJ RAYMOND O. MILLER, *Inf*

The biography of Charles V is a study in frustration.

In Charles were united the thrones of Spain and of the many holdings of the Hapsburgs. He bought election to the title of Holy Roman Emperor and so plunged himself into financial difficulties that plagued him until death. His struggles with Catholic France, Moslem Turkey, and Protestant Germany further increased his debts. He tried to reconcile Luther and the Pope but met obstinacy on either side. A loyal Catholic, he attacked heresy within his personal domains with the vigor of the time—yet the Papacy thwarted his political and diplomatic endeavors. His one legitimate son and successor to his Spanish crowns he recognized as incompetent—but he was tired and abdicated in his son's favor.

The military reader will find the many campaigns of Charles mentioned in passing only as background for the other themes—family, church, politics, and diplomacy.

Students of history will derive pleasure and knowledge from this book, other readers who are tenacious and patient may do the same, but many average readers with limited time probably will follow Charles' lead and quit before they are through.

## THE ROOTS OF AMERICAN COMMUNISM.

By Theodore Draper. 498 Pages. The Viking Press, Inc., New York. \$6.75.

By MAJ RAY J. YANTIS, *Inf*

This initial volume of a series of studies of the influence of communism in American life, to be prepared with the support of the Fund for the Republic, is concerned with the development of the Communist Party, USA, up to 1923. Beginning with early leftwing efforts, the meanderings of movements and individuals as they drift toward communism, develop the Party, and come under the complete control of Moscow are pictured. Particularly notable are the struggles between "foreign language" groups and "English-speaking" groups, between advocates of a legal versus an illegal party, and between "uncompromising principled" Communists and those who believed in expediency toward accomplishment of the desired goal.

This is not a book for the exposé seeker. Mr. Draper attempts to present events as they occurred, in a straightforward approach. To an extent the infiltration of the Party by representatives of the Justice Department and the post-World War I legal difficulties are told. However, "interest raisers" are confined largely to manipulations within the Party.

Extensively referenced, this book will be of valuable help to those who would understand the American Communist movement.

**HISTOIRE DE LA TACTIQUE ET DE LA STRATEGIE.** By Captain René Pichené. 222 Pages. Editions de la Pensée Moderne, Paris, France.

By LT COL JEAN P. MESLET, *French Army*

This French-language volume presents an accurate study of tactics and strategy from antiquity to World War I. It demonstrates the importance and development of the presently known principles of war and the manner in which various military personalities applied them.

**THE HUNGARIAN REVOLUTION.** Edited by Melvin J. Lasky. 318 Pages. Frederick A. Praeger, Inc., New York. \$5.00.

By MAJ CHARLES L. STEEL, JR., *CE*

"In July 1849, 200,000 Russians invaded Hungary, Kossuth asked for help from 'free Europe.' He did not get it. . . ." Over 100 years later, on 4 November 1957, these same Russians, in almost equal numbers, again invaded Hungary following the dramatic and yet tragic revolution and "free Europe" as well as the rest of the "free world" again sat on the sidelines and remained idle.

Mr. Lasky in his white paper has done a masterful job of piecing together the bits and pieces of the story which led up to the revolution and then portrays the actual days of fighting and aftermath as they appeared through all the media of communication both from the "free world" and from behind the "Iron Curtain."

For the military reader, the actions taken by the Russians, their methods, and the reactions of the Soviet soldier, including many defections, are of interest.

This book, however, is not written to enhance easy reading. Rather, it presents a comprehensive digest more suited as reference material.

**NOTES ON ATOMIC ENERGY FOR MEDICAL OFFICERS.** By The Royal Naval Medical School. 169 Pages. The Philosophical Library, Inc., New York. \$4.75.

**RETIREMENT FROM THE ARMED FORCES.** Prepared by a Committee of Retired Army, Navy, and Air Force Officers. 431 Pages. The Military Service Publishing Co., Harrisburg, Pa. \$4.95.

By LT COL ROBERT M. WALKER, *Arty*

Unless death intervenes, retirement is inevitable. Over 98 percent of all officers with permanent commissions will retire in their early fifties, and many of them will be unprepared for this major change in their way of life. This book contains the advice of many retired officers who were polled to find their reactions to the problems of retirement.

It includes information on medical and health features; places to live; how to get a job; how to acquire a home; a sound program for savings and investment; benefits from the Veterans Administration and Social Security; service benefits; rights and restrictions; living abroad; survivor benefits; and setting oneself up in business.

**KHRUSHCHEV OF THE UKRAINE.** By Victor Alexandrov. 216 Pages. The Philosophical Library, Inc., New York. \$4.75.

By MAJ HARRY H. JACKSON, *Inf*

Journalist Alexandrov has written an easily read biography of the First Secretary of the Communist Party. However, in his journalese approach to Khrushchev he is rather hazy as to the sources and basis for some of his "facts" and conclusions. This biography is a "once over lightly" résumé of a Communist's climb to power, but it leaves much to be desired as a definitive work on the man who presently speaks for Russia.

**A MILITARY HISTORY OF THE WESTERN WORLD.** Volume 3. From the Seven Days' Battle, 1862, to the Battle of Leyte Gulf, 1944. By Major General J. F. C. Fuller. 666 Pages. Funk & Wagnalls Co., New York. \$6.00.

**VICTORY IN PAPUA.** U. S. Army in World War II. By Samuel Milner. 409 Pages. Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. \$3.50.

By LT COL ROBERT M. WALKER, *Arty*

The latest Pacific volume of the US Army in World War II series tells the story of the six-month struggle that followed the Japanese landings on New Guinea's steaming Papuan Peninsula, as General Douglas MacArthur's American and Australian troops tried to drive the Japanese back into the sea.

Against the broad background of the action of the 32d US Infantry Division, the author presents the combat experience of smaller units in sharp clear focus. Page by page it spells out the agonies and frustrations of men living and fighting under intolerable conditions, plagued by disease, short of equipment, ill-prepared for jungle fighting, and pitted against a skillful and resolute foe. This volume is an outstanding example of objective historical writing.

**BY COMMAND OF THE EMPEROR.** By Major S. J. Watson. 230 Pages. The Bodley Head, London, England. \$3.50.

By MAJ BRUNO J. ROLAK, *MPC*

This first biography in English of Marshal Berthier, Napoleon's chief of staff from 1796 to 1814, is an absorbing story of a long and eventful military partnership.

Major Watson of the Royal Engineers, and a graduate of the U. S. Army Command and General Staff College, writes with understanding, warmth, and humor of the man who translated Napoleon's decisions into orders. Absence of a "Career Management Bureau" permitted Berthier to continue in the position of chief of staff for 18 years, with but brief interruptions. For a period he served both as minister of war and as chief of staff. In this work

Berthier emerges as a loyal, competent officer content to remain in the background while Napoleon accepted the plaudits of the crowd, a role he relished.

This book, while emphasizing the staff organization and procedures of the French Army, does not neglect the human relations, loves, and intrigues which colored this period of history. As such, it has value for those interested in any aspect of the French scene during the period of Napoleon's rise and fall.

**HEROES BEHIND BARBED WIRE.** By Colonel Kenneth K. Hansen. 345 Pages. D. Van Nostrand Co., Inc., Princeton, N. J. \$5.95.

By LT COL IRVING HEYMONT, *Inf*

The chief of psychological warfare of the Far East Command and United Nations Command during the Korean conflict has written a vivid account of the winning over of 88,000 Chinese and North Korean prisoners of war. The author describes in detail the program employed by the Far East Command to achieve such astounding success. The extent of the success of this program can be gauged by the fact that only three percent of the total number of prisoners interviewed by the Neutral Nations Repatriation Commission chose to return to Communist rule.

American interest has been focused for the most part on the unusual phenomena of a handful of our soldiers refusing repatriation or collaborating with the enemy while in captivity. This interest has clouded the fact that Panmunjom revealed the weakness of any dictatorial government.

With the battle for the minds of men assuming equal importance with battlefield operations, Colonel Hansen's book is an excellent and needed case study. It will prove of interest and value to all military readers, particularly those concerned with the handling and custody of prisoners of war.

**INTERAVIA ABC. DIRECTORY OF WORLD AVIATION.** 1,235 Pages. Interavia. New York. \$12.00.

By LT COL GEORGE B. MACAULAY, *Arty*

Here, for the first time, is a complete and up-to-date directory of international aeronautics. It lists 30,000 administrations, organizations, companies, and enterprises and their addresses.

The volume is divided into four parts, an alphabetical listing of civil and military aviation authorities, airlines, aircraft companies, equipment manufacturers, flying clubs, and virtually every other type of aeronautical activity of every nation of the world. This is cross-referenced to the second part which provides details of addresses, telephone numbers, cable addresses, names of executive personnel, products manufactured, and listings of aircraft in use by the various airlines. The third part is a five-language glossary of aeronautical terms, and the fourth section is an alphabetical list of the world's senior aviation executives and officers.

**THE SOLDIER AND THE STATE.** The Theory and Politics of Civil-Military Relations. By Samuel P. Huntington. 534 Pages. The Belnap Press of Harvard University Press, Cambridge, Mass. \$7.50.

By LT COL JOHN K. SINGLAUB, *Inf*

As an important contribution to the relatively new field of civil-military relations, this thought-provoking book will interest the professional officer as well as those civilians whose responsibilities are associated with the security of the Nation.

In developing his theory, Mr. Huntington first established the essential qualities of the military profession and of the military ethic. He presents what he describes as "objective civilian control," in which military professionalism is maximized, as the only effective method of reducing the political power of the military while at

the same time increasing the likelihood of achieving military security. This type of control is contrasted to what he calls "subjective civilian control," in which conflicting civilian interests and groups vie for control over the military as a means of enhancing their own power.

He then proceeds to demonstrate how his theory encompasses and explains relevant facts concerning the different ideologies of the Japanese and German officer corps and the interrelationship between failures of national security policies and losses in military professionalism.

Readers will be impressed with the author's logic when he argues that security will depend upon the ability of the United States to evolve an intellectual climate more favorable to the existence of military professionalism and the achievement of objective civilian control.

**POLAND. EAST-CENTRAL EUROPE UNDER THE COMMUNISTS.** Edited by Oscar Halecki. 601 Pages. Frederick A. Praeger, Inc., New York. \$10.00.

By LT COL MITCHEL GOLDENTHAL, *CE*

The Mid-European Studies Center produced this massive volume which continues the task of presenting accurate, comprehensive information and analysis on each of the Mid-European countries dominated by the Communists. This work, prepared by a superb team of expert scholars, represents a truly substantial addition to our knowledge of Communist Poland.

Mr. Halecki organized the book into 21 chapters covering Poland's history, politics, culture, and economy. These chapters clearly reveal that Poland occupies a key position in the Soviet order because of her size, population, historical tradition, and military and economic potential. The military reader will glean a key to understanding the future of Europe and even communism itself by studying this carefully prepared book about Poland.

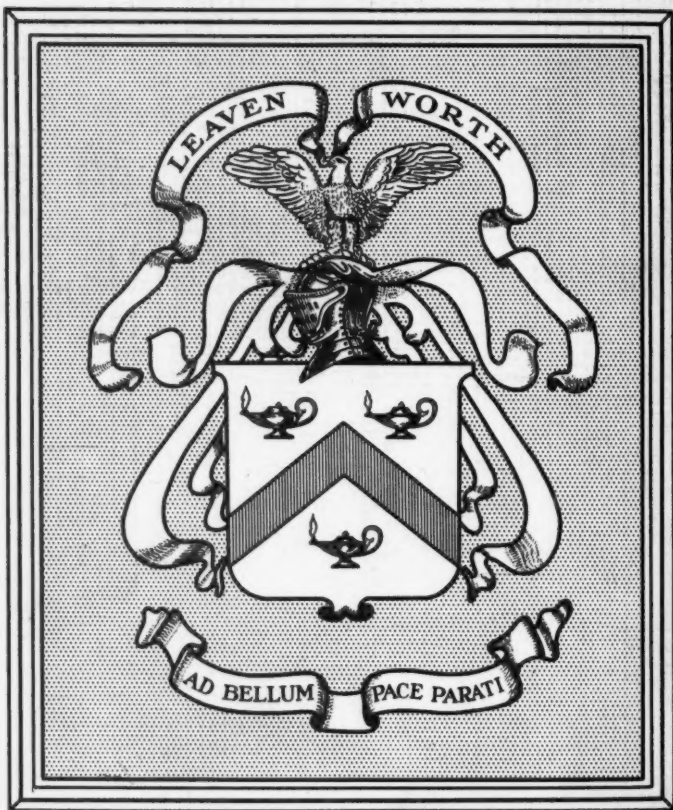
## MILITARY REVIEW ANNUAL AWARD

The monthly first place award articles submitted by military writers and published in the **MILITARY REVIEW** during the period November 1956 through October 1957 inclusive have been reviewed by a faculty committee of the U. S. Army Command and General Staff College. The following article was selected to receive the Annual Award of \$350:—

**How Much Constitutes a Trend? Another Look at Unification,**  
*Lt Col Anthony L. Wermuth, Infantry, 21st Infantry, 24th Infantry Division, January 1957 issue.*

The other monthly award winners considered in the Annual Award competition were:

<i>Month</i>	<i>Title and Author</i>
November	Type Divisions for Atomic Warfare, <i>Col James M. Shepherd, Infantry, Faculty, U. S. Army Command and General Staff College</i>
December	Economics of Logistics, <i>Col Thomas F. Donahue, Ordnance Corps, Ordnance Section, Headquarters Sixth Army</i>
March	The Principles of War and Psywar, <i>Maj R. D. Connolly, Signal Corps, Faculty, The Special Warfare School, Fort Bragg, North Carolina</i>
April	Readiness for the Little War—Optimum Integrated Strategy, <i>Cols Raymond L. Shoemaker, Jr., Artillery, and Peter L. Urban, Artillery; Lt Cols John Clapper, Jr., Signal Corps; William D. McDowell, Infantry; Daniel A. Raymond, Corps of Engineers; John K. Singlaub, Infantry; Cecil C. Helena, Infantry; and Major John H. Cushman, Infantry, all staff and faculty, USA CGSC</i>
May	Readiness for the Little War—A Strategic Security Force, by the same voluntary study group which authored the April award winning article.
June	Wanted: Professionals for Rescue and Rehabilitation, <i>Maj Irvin M. Kent, Judge Advocate General's Corps, Headquarters, First Army</i>
July	The Military Function and the Soldier, <i>Col Oliver K. Marshall, Artillery, Headquarters, Continental Air Defense Command</i>
August	Name, Rank, and Service Number, <i>Col Carl E. Williamson, Judge Advocate General's Corps, Headquarters, United States Continental Army Command</i>
September	Logistical Coordination Between Allied Forces, <i>Col Albert S. Britt, Jr., Artillery, Faculty, U. S. Army Artillery and Missile School</i>
October	The Night Attack—Blueprint for Atomic Victory, <i>Lt Col Robert M. Walker, Artillery, Faculty, USA CGSC</i>



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